Identification of Groundwater Potential Areas Using Remote Sensing and GIS Techniques

[1]A.Anil, [2] K. Chandra Sekhar Reddy, [3] R.Bhavani
[1] Research scholar, Department of Civil Engineering, JNTUA, Ananthapuramu,
[2] Professor, Department of Civil Engineering, Siddhartha Institute of Engg&Tech, Puttur
[3] Associate Professor, Department of Civil Engineering, JNTUA, Ananthapuramu

Abstract

Groundwater is a dynamic and important natural resource which plays a significant role in meeting the fresh water needs of mankind. The sustainable development and management of groundwater resource requires precise quantitative assessment based on scientific principle and modern techniques. In the present study, groundwater potential zone are delineated using remote sensing, geographical information system (GIS) and multi-criteria decision making techniques in palar sub basin lies between 13°20' to 13° 50' N latitudes and 79° 5' to 79° 30' E longitudes which is small tributary of pennar River in chittoor district of Andhra Pradesh. The delineation of groundwater potential zones of palar sub-basin was carried out by developing thematic maps of slope, soil, geomorphology and land use/land cover were developed, rasterized, grouped into classes and assigned appropriate weights. The groundwater potential zone map was finally verified using groundwater level fluctuation map overlaid with groundwater potential zone map the results was found satisfactory and it is facilitated to identify suitable sites for artificial recharge structures.

Introduction

Water is one of the essential natural resource, without which life cannot exist. Demand of water is increasing with the increase of population. We need water for agriculture, industry, human and cattle consumption. Therefore it is very important to manage this very essential resource with sustainable manner. Hence, we need proper management and development planning to restore or recharge water where runoff is very high due to various topographical conditions. Remote sensing is the acquisition of information about an object or phenomenon without making physical contact with the object and thus in contrast to on site observation. In modern usage, the term generally refers to the use of aerial sensor technologies to detect and classify objects on Earth by means of propagated signals.

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 06 | June 2021 www.irjet.net p-ISSN: 2395-0072

Effect of Temperature on Strength Properties of Fly ash based Geopolymer Concrete

S. Abdul Amanulla[1], D. Nirosha[2], Dr J. Guru Jawahar[3]

[1]*P.G Student, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, Andhra Pradesh, India*
[2]*Assistant Professor, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, Andhra Pradesh, India*
[3]*Professor, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, Andhra Pradesh, India*

Abstract - *The major problem that the earth facing today is the environmental pollution. Within the housing industry mainly the assembly of Portland cement will cause the emission of pollutants ends up in environmental pollution. Globally, the assembly of cement contributes a minimum of 5 to 7% of CO_2. We can reduce the pollution effect on environment, by increasing the usage of commercial products in our housing industry. The major problem the globe is facing today is that the environmental pollution. This work carried on studies of temperature effect on strength of fly ash based geopolymer concrete. Geopolymer concrete is manufactured class F fly ash (100%). Sodium silicate solution and sodium hydroxide solution used as alkaline activator.Cubes of size 150mmX150mmX150mm were made at solution to ash ratio of 0.35. All specimens were cured in oven at 50^{0}C, 60^{0}C, 70^{0}C & 80^{0}C for different molarities 5M, 7M, 9M for a period of 20 hours. After oven curing, cubes moved to temperature for curing period. The slump cone test was carried to review the workability of concrete. After curing period of 7 days and 28 days UPV test and compressive test were performed. Concluded that different molarity Geopolymer Concrete attains maximum strength at different temperature conditions. Test results show that the 5M, 7M and 9M Geopolymer Concrete has optimum temperature of 70^{0}C.*

Key Words: (Fly ash, Alkaline activators)

1.INTRODUCTION

Geopolymer concrete is associate unindustrialized material goes to be a revolution at intervals the analysis field and conjointly at intervals the development business. Increase of cement demand winds up within the increase of production of cement. Cement is that the foremost material from the concrete industry throughout the planet. Day by day, the need of cement at intervals the concrete business and at intervals the event field is increasing quite alarmingly. To overcome the greenhouse gas drawback towards atmosphere, Davidovits Joseph in 1978 introduced new kind of concrete named as Geopolymer concrete. Geopolymer cement might even be a binding system that hardens at temperature. Geopolymer concrete is eco-friendly construction material associated an alternate to hydraulic cement. Geopolymer binders are found to be the simplest alternate to cement binders. Use of geopolymer reduces the demand of hydraulic cement that is responsible for high dioxide emission. Geopolymer concretes are cement less concrete that utilize by product materials like ash at intervals the presence of base forming resolution to produce binders.

2.LITERATURE REVIEW

Geopolymer concrete was introduced by Davidovits Joseph in 1978. The cement is primary binding material in the concrete. As the increase in demand of cement, results in increase of production of cement which results emission of carbon dioxide in greater quantity into environment causing global warming. To overcome this issue, Davidovits Joseph from his research introduced geopolymers which are rich in silica and alumina containing cementitious properties. This geopolymers are wastages from chemical, thermal and steel plant industries. This geopolymers are used as primary binding material by replacing cement in concrete. This concrete known as geopolymer concrete. Geopolymer concrete has greater strength, durability, fire resistance and many advantages compare to normal conventional concrete. Generally, strength of geopolymer concrete is higher than normal concrete. Geopolymer concrete was manufactured replacing cement with fly ash, GGBS and other cementitious material.

3.EXPERIMENTAL STUDY

In this study mainly explains about the effect of geopolymer concrete attains smart strength beneath temperature condition. Once cured at warm temperature conditions the strength of geopolymer concrete will increase. Typically, ordinary hydraulic cement is cured by water treatment methodology. Geopolymer concrete exhibits distinctive nature beneath temperature impact. The base-forming resolution act as accelerator in geopolymer concrete once exposure in temperature. Geopolymer concrete attain strength >70 N/mm2 beneath warm temperature conditions. Geopolymer concrete can attain higher strength in one day. Increase in strength, durability, heat resistance once geopolymer concrete cured at warm temperature conditions.

3.1Mix Proportions

In the below tables awarded as different type of mixes as well indifferent proportions of constituent materials. which are shown in Tables below.

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 06 | June 2021 www.irjet.net p-ISSN: 2395-0072

Effect of Temperature on Strength Properties of Fly ash and GGBS Blended Geopolymer Concrete using Quarry Dust

K. Prasad[1], K. Sai Abhinav[2], Dr J. Guru Jawahar[3]

[1]*P.G Student, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, Andhra Pradesh, India*
[2]Assistant *Professor, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, Andhra Pradesh, India*
[3]*Professor, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, Andhra Pradesh, India*

Abstract - *The major problem that the earth facing today is the environmental pollution. Within the housing industry mainly the assembly of Portland cement will causes the emission of pollutants ends up in environmental pollution. Globally, the assembly of cement contributes a minimum of 5 to 7% of CO_2. We can reduce the pollution effect on environment, by increasing the usage of commercial products in our housing industry. This work carried on studies of temperature effect on strength of geopolymer concrete using quarry dust as fine aggregate. Geo-polymer concrete is manufactured class F fly ash and ground granulated blast furnace slag (GGBS) in 75% : 25% proportion. Sodium silicate solution and sodium hydroxide solution used as alkaline activator. Cubes of size 150mmX150mmX150mm were made at solution to ash ratio of 0.35. All specimens were cured in oven at 50^{0}C, 60^{0}C, 70^{0}C, 80^{0}C & 90^{0}C for different molarity 5M, 7M, 9M for a period of 20 hours. After oven curing, cubes moved to temperature for curing period. The slump cone test was carried to review the workability of concrete. After curing period of 7 days and 28 days UPV test and compressive test were performed. Concluded that different molarity GPC attains maximum strength at different temperature conditions. Test results show that the 5M, 7M and 9M GPC has optimum temperature of 70^{0}C.*

Key Words: Fly ash, Alkaline activators

1.INTRODUCTION

Geopolymer concrete is associate unindustrialized material goes to be a revolution at intervals the analysis field and conjointly at intervals the development business. Increase of cement demand winds up within the increase of production of cement. Cement is that the foremost material from the concrete industry throughout the planet. Day by day, the need of cement at intervals the concrete business and at intervals the event field is increasing quite alarmingly. To overcome the greenhouse gas drawback towards atmosphere, Davidovits Joseph in 1978 introduced new kind of concrete named as Geopolymer concrete. Geopolymer cement might even be a binding system that hardens at temperature. Geopolymer concrete is eco-friendly construction material associated an alternate to hydraulic cement. Geopolymer binders are found to be the simplest alternate to cement binders. Use of geopolymer reduces the demand of hydraulic cement that is responsible for high dioxide emission. Geopolymer concretes are cement less concrete that utilize by product materials like ash at intervals the presence of base forming resolution to produce binders.

2.LITERATURE REVIEW

Geopolymer concrete was introduced by Davidovits Joseph in 1978. The cement is primary binding material in the concrete. As the increase in demand of cement, results in increase of production of cement which results emission of carbon dioxide in greater quantity into environment causing global warming. To overcome this issue, Davidovits Joseph from his research introduced geopolymers which are rich in silica and alumina containing cementitious properties. This geopolymers are wastages from chemical, thermal and steel plant industries. This geopolymers are used as primary binding material by replacing cement in concrete. This concrete known as geopolymer concrete. Geopolymer concrete has greater strength, durability, fire resistance and many advantages compare to normal conventional concrete. Generally, strength of geopolymer concrete is higher than normal concrete. Geopolymer concrete was manufactured replacing cement with fly ash, GGBS and other cementitious material.

3.EXPERIMENTAL STUDY

In this study mainly explains about the effect of geopolymer concrete attains smart strength beneath temperature condition. Once cured at warm temperature conditions the strength of geopolymer concrete will increase. Typically, ordinary hydraulic cement is cured by water treatment methodology. Geopolymer concrete exhibits distinctive nature beneath temperature impact. The base-forming resolution act as accelerator in geopolymer concrete once exposure in temperature. Geopolymer concrete attain strength >70 N/mm2 beneath warm temperature conditions. Geopolymer concrete can attain higher strength in one day. Increase in strength, durability, heat resistance once geopolymer concrete cured at warm temperature conditions.

3.1Mix Proportions

In the below tables awarded as different type of mixes as well indifferent proportions of constituent materials. which are shown in Tables below.

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 06 | June 2021 www.irjet.net p-ISSN: 2395-0072

ANALYSIS AND DESIGN OF RESIDENTIAL BUILDING WITH INVERTED V BRACING BY USING ETABS 2015

N.SHEREEN[1],P.NARENDRA REDDY[2], Dr.J.GURU JAWAHAR[3], S.SAMEER[4]

[1]P.G Student, Annamacharya institute of technology and sciences(AUTONOMOUS),Tirupati,India
[2,3,4]Annamacharya institute of technology and sciences(AUTONOMOUS),Tirupati,A,P,India

---

Abstract - *From the ancient we know earthquake is a disaster causing occasion. Up to date days construction are fitting increasingly narrow and extra inclined to sway and consequently detrimental within the earthquake. Researchers and engineers had worked out within past to make the construction as earthquake resistant. After many functional reports it have been proven that use of lateral load resisting methods in the constructing configuration has drastically increased the performance of the structure. In the present analysis, a residential building is analyzed and designed with X bracing for a G+14 building. The building is analyzed in both static and dynamic analysis response spectrum method is carried out for the building. The building is analyzed in condition i.e., in Zone-4 and Zone-5 in Soil A,B and C.A commercial package of ETABS 2015 has been utilized for the analyzing residential building. The result has been compared using tables and graphs to find out the most optimized solution. Concluding remark has been made on the basis of that analyzing and comparison tables.*

Key Words : ETABS 2015, Residential Building, Inverted V Bracing.

1. INTRODUCTION

From a structural engineer's factor of view the tall constructing or high upward thrust constructing (HRB) may be outlined in concert that, with the inside the structural type. Tall constructions have involved grouping from the beginning of civilization. Such structures were made for safeguard and to indicate pleasure. The system of urbanization that began with the age of industrialization remains to be ongoing in setting up nations like India. Industrialization motives migration of contributors to urban centers wherever job opportunities are critical. The land accessible for structures to accommodate this migration is changing into scarce, main too fast expand inside the cost of land. The growth in latest multi storied constructing development, which began in late nineteenth century, is meant for essentially the most part for industrial and residential features. Tall buildings are the fundamental conflicting necessities and problematic constructing techniques to integrate. In these day's tall constructions are getting extra and evolved engineered structures considering there are a few additional slim ensuing in the hazard of further sway as compared with earlier high-rise structures.

For that reason the influence of wind and seismic forces performing on them turns into an awfully foremost facet of the seam. Rising the structural techniques of tall structures will management their dynamic response. A tall building can be outlined as a constructing whose design is dominated via the lateral forces prompted given that of wind and earthquake. On the way's aspect ten experiences, the lateral flow begins dominant the seam, the stiffness rather of force turns into the dominant problem. Fully distinctive structural forms of tall structures could also be accustomed strengthen the lateral stiffness and to decrease the waft index. Many Lateral resisting systems (comparable to introduction of body-wall, framed tube, belt truss with stabilizer, tube in tube and bundled tube programs) may be accustomed withstand the lateral plenty functioning on the constitution. This be taught seeks to understand the more than a few lateral techniques that have emerged and its associated structural behavior for soil kind three (i.e., smooth soil form) all advised 4 zones.

1.1 ETABS

From the beginning of style conception through the assembly of schematic drawings, ETABS integrates each side of the engineering style method. Creation of models has ne'er been easier - intuitive drawing commands provide the fast generation of floor and elevation framing. CAD drawings are often reborn directly into ETABS models or used as templates onto that ETABS objects could also be overlaid. The progressive SAP fireplace 64- bit problem solver permits extraordinarily giant and sophisticated models to be quickly analyzed, and supports nonlinear modeling techniques like construction sequencing and time effects (e.g., creep and shrinkage).

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 08 Issue: 08 | Aug 2021 www.irjet.net p-ISSN: 2395-0072

COMPARATIVE STUDY ON COST EFFECTIVE GEOPOLYMER BRICKS USING SAND AND QUARRY DUST

P. Hema Kumar Reddy[1], J. Guru Jawahar[2], D. Pavan Kumar[3], A. Anil[4]

[1]P.G Student, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, Andhra Pradesh, India
[2]Professor, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, Andhra Pradesh, India
[3]Assistant Professor, Department of Civil Engineering, JNTUA, Ananthapuramu, Andhra Pradesh, India
[4]Assistant Professor, Department of Civil Engineering, Annamacharya Institute of Technology and Sciences, AP, India

---

Abstract - This study is mainly dealt with *Geopolymer bricks comprising of ingredients such as fly ash, GGBS as source materials, quarry dust and river sand both used as fine aggregates for different compositions and solution of sodium hydroxide(NaOH) and sodium silicate(Na_2SiO_3) as an alkaline activator. The molarity of sodium hydroxide was taken as 1M for all the compositions and the ratio of sodium silicate to sodium hydroxide solution varies as 0.25, 0.5 and 1. The dimensions of the brick specimens are taken as 230mm*110mm*70mm. Compressive strength, water absorption and Efflorescence tests were conducted on the test specimens to find out the brick properties. Compressive strength and dry and wet weights of geopolymer bricks were determined after 3 and 7 days of ambient curing at room temperature. It is observed that the increase of the ratio of SSS to SHS increased the dry and wet weights and compressive strength of bricks at all ages and sodium silicate solution is the main agent that is playing a major role in the increase in the strength of geopolymer bricks. It is also observed that the geopolymer bricks made with quarry dust have attained less compressive strength when compared to geopolymer bricks made with sand.*

Key Words: Geopolymer, Fly ash, GGBS, Quarry dust, Sand, Compressive strength, Cost analysis

1.INTRODUCTION

Bricks have been used in India for more than 1000 years. Due to the cost reduction as well as their less weight properties, fly ash bricks have been tremendously used. Due to the environmental pollution and its problems in the production of fly ash, it is highly important to rethink about the possibilities of alternative methods to control pollution and sustainable development. The cement manufacturing industries generally use fly ash as a partial and/or complete replacement to make Pozzolona cement. Ordinary Portland cement (OPC) typically produces a large amount of carbon dioxide (CO_2) in the nature that significantly increase greenhouse effect. Geopolymer brick is an innovative building material produced by the chemical reaction of inorganic particles which has a huge potential to deplete the greenhouse emission by 80%. This study is to present the technology behind the production of geopolymer bricks using non-pollutant industrial waste materials and to discover and evaluate the physical and durable properties of it.

1.1 Introduction to Geopolymer

Generally, geopolymers are typically inorganic and alumino-silicate (Si-O-Al) based ceramic materials similar to zeolites. The formation of geopolymers is a quick reaction of the alkaline activated solution with silica, alumina minerals which further forms a three-dimensional polymeric long chain of an amorphous covalent bond network. The name geopolymer derived from the rock forming raw materials which are of geological origin and used in the synthesis process for silicon-based polymers.

1.2 Development of Geopolymer Bricks

Generally, fly ash of class F is rich with silica and alumina content. When fly ash (class-F) is used in the brick manufacturing, the high amount of silica and alumina reacts with alkali activated pre-mixed solution of sodium hydroxide and sodium silicate. This reaction activity results in gel formation which is known as the binder hence there is no requirement of cement in this brick production.

1.3 Objectives

This investigation is mainly focused on the basic properties of geopolymer bricks manufactured with class F fly ash and ground granulated blast furnace slag (GGBS), river sand and quarry dust used as fine aggregates,sodium hydroxide and sodium silicate used as an alkali activator. The molarity of sodium hydroxide fixed at 1M for all the mixtures and the ratio of sodium silicate solution (SSS) to sodium hydroxide solution (SHS) was varied at different ratios (0.25, 0.5 and 1). Based on the background of this project, the research comprises of the following stages:

1. To determine the weight and compressive strength of Geopolymer bricks using quarry dust and river sand as fine aggregate after 3 and 7 days of ambient room temperature curing.

ISSN: 0974-5823 Vol. 7 No. 4 April, 2022

International Journal of Mechanical Engineering

Flexural Behaviour of FA and GGBS based RGPC Slabs

S. Pradeep Kumar[1], B.Kameswara Rao[2] J. Guru Jawahar[3],

[1]Reasearch Scholar, [2]Professor, Department of Civil Engineering, Koneru Lakshmaiah Education Foundation, Vaddeswaram, AP, India.

[3]Professor, Dept. of civil engineering, Annamacharya Institute of Technology and sciences, Andhra Pradesh, India

Abstract:

Research on RGPC structural elements is still in the early stages. A small number of studies on the flexural behaviour of RGPC slabs are available. In this study, the efficacy of fly-ash and GGBS in RGPC flexural components is investigated. The RGPC flexural components are investigated in this study. RGPC slabs with a 50:50 percentage of fly-ash and GGBS with reinforcement, varying molarity of NaOH, and cured at ambient room temperature and water curing. All slabs were subjected to uniformly distributed loading conditions with all four sides being fixed and simply supported edge conditions. To compute and calculate the load vs deflections and moments carrying capacities as per IS 456 and yield line theory. The flexural behaviour of RGPC slabs is found similar and concluded that 50:50 proportion of FA: GGBS is used for structural applications.

Keywords: Flexural behaviour of slabs, Moment's, type of curing, Fixed and Simply supported edges

Introduction:

At present, the construction industry is trying to move towards sustainable development and improving the usage of environmentally eco-friendly materials to control global warming. Construction projects are the fastest growing and emerging economies to meet their demands, 4.2 billion tons of concrete are made per year. During the manufacturing process of cement, around 5 to 10% of CO_2 emissions are released into the environment, from these cement industries causing tremendous damage to the ecology, deteriorating air quality, and human health [1]. CO_2 emissions can be reduced by 12 % using various efficiency improvement techniques, using low carbon fuel content like coal to natural gas, using chemical absorption process, the strategy of changing clinker manufacturing process [2]. Incorporation of various sustainable cementitious materials like GGBFS, FA, SF, MK, RHA moreover, these materials show a positive impact on concrete in terms of their mechanical and durability properties, which in turn to lead environmental benefits of low CO_2 [3]. Nevertheless, in construction most feasible alternative is cement, gaining, the knowledge in construction, advancement in concrete technology many researchers are focused on viable solutions to replace and reduce the emissions of cement production. Davidovits describe a new mineral binder with chemical composition, i.e. Geopolymer Concrete. It is an inorganic aluminosilicate polymeric gel resulting from the reaction of amorphous aluminosilicates with alkali hydroxide and silicate solutions. By utilizing the polycondensation of silica and alumina precursors to achieve the required strength [4]. Different names were distinguished in their works such as Alkali-Activated Cement (AAC), Inorganic polymer concrete (IPC), and Geocement which are used to describe materials synthesized using the same chemistry [5]. Generally, the volume of concrete contains nearly 70 to 80 percent of Natural Coarse Aggregate, which influences the freshness and hardness of the concrete. Every industrialized country is dependent on aggregate resources like Sand, Gravel, and Stones to build and maintain infrastructural needs. These materials have been recorded due to scarcity of resources, increasing the risk of their availability compared to the alleged needs. To meet these societal needs depends on aggregate mining, which causes a serious impact on the environment [6]. One of the developing concerns about the hereafter of our planet, is to bring in the concept of sustainability in the construction industry. Alexander Vasquez et.al used Concrete Demolition Waste as a precursor to producing GPC, they obtain 25 MPa of strength with 100 % CDW when the addition of 10% of MK and 30% of Portland cement there is an increase in strength 76 % and 31.7 % respectively at 28 days of curing. [7]. F. U. Ahmed Shaikh has observed the mechanical properties of GPC decrease and durability properties show better results with the inclusion of 50 % of RCA at 7 and 28 days of curing [8]. Madheswaran C.K. et.al describes the flexural behavior of RGPC beams using LWA they obtained ultimate load capacities ranging from 53.3 to 64.85KN, 24 to 36.6 KN at 100 % and 50% of reinforcement respectively [9]. Another author O. M. Omar is used local steel slag as a coarse aggregate they observed 6 % higher compressive strength with 100 % substitute of local steel slag [10]. Kaim Mermerdas et.al evaluated the effects, by using different types of aggregates in GM in terms of strength, flowability, unit weight, absorption. They observed that grading of aggregate influences the flow properties, higher flowability with the coarse grading result of a lower specific surface, obtained better strength with crushed limestone and having low water absorption, sorptivity using combined natural sand and crushed limestone [11]. Peem Nuaklone et.al obtained 30.6-38.4 MPa of compressive strength with HCFA Geopolymer Concrete containing RCA these values are slightly lower if concrete contains crushed limestone. At 12 and 16 molarity gives better performance in terms of volume of voids, sorptivity, and absorption [12]. V. Sathish Kumar et.al studied by using three types of blended source materials in various % of replacement levels of fly ash they observed that oven-cured samples achieved higher strength than the steam type of curing [13]. B.V.Rangan et.al identified several financial benefits of usage of fly ash-based GPC and also represents suitable for

Volume 64, Part 2, 2022, Pages 1048-1053

Influence of non-woven fabric as controlled permeable formwork liner in concrete

Thulasirajan Krishnan [a], Telkar Sai Krishna [a], Pradeepkumar Sugumar [b], Edagutta Narasimhulu [a]

Show more

https://doi.org/10.1016/j.matpr.2022.05.221

Abstract

Abstract

The suitability of locally available non-woven fabric as controlled permeable formwork liner in different grades of concrete (M20, M30 & M40) was studied. The performance of conventional steel formwork concrete and non-woven fabric liner concrete were compared. From the test results, the properties of the non-woven fabric liner concrete were superior to those of the conventional steel formwork concrete. The performance of non-woven fabric liner was notable in M20 concrete grade. Overall, the use of locally available non-woven fabric liner in different grades of concrete resulted in a strong and dense cover concrete pertaining to a durable reinforced concrete structures.

Introduction

Durability of concrete is significant in the preservation of the structure's service life. Factors such as water-cement ratio, specifications of concrete making ingredients and quality of workmanship governs the durability of concrete [1]. Apart from these factors, the quality of cover concrete plays a vital role, due to the directly exposed to diverse environmental conditions subjected to both chemical as well as mechanical induced deteriorations [2], [3]. The quality of cover concrete produced from conventional formwork (steel or wood) is poor as compared to that of the core concrete [4]. Compaction of fresh concrete leads to accumulation of water and air near to the conventional formwork, which subsequently results in poor cover concrete. This is evident by the presence of blowholes/air pockets/blemishes in the surface of concrete [5]. Many researchers focus on this issue, which motivated for the application of liner material along the surface of steel or wooden formwork. The liner material is called as controlled permeable formwork (CPF) liner. The function of the CPF liner is to allow the

International Journal of Scientific Engineering and Research (IJSER)
ISSN (Online): 2347-3878
Impact Factor (2020): 6.733

Effect of Controlled Permeable Formwork in Concrete Using Woven and Non-Woven Fabric as CPF Liner

Thoyajakshudu Chalamarla[1], Dr. K. Thulasirajan[2]

[1]thoyajakshuduchalamarla[at]gmail.com
[2]M.TECH., Ph.D., Annamacharya Institute of Technology and Sciences, Tirupati, India
Email: kthulasirajan[at]gmail.com

Abstract: ***Surface quality of the concrete is important for the durability of reinforced concrete structure, because the cover stands at the forefront defending both mechanical damages and chemical deterioration. Controlled permeable formwork (CPF) liner was developed primarily to improve the surface quality of concrete and thereby its durability. CPF liner drains mix water and entrapped air from the near surface of concrete while retaining cement and other fine particles. This helps to reduce water-cement ratio, increase cement content and decrease surface pores in the surface zone of concrete. This paper reports an experimental study carried out to study the effect of CPF liner on the strength and certain mechanical properties of concrete with three different grades of concrete. M20 & M40 was chosen for the present study. The specimens were prepared against CPF liner and impermeable steel formwork (IMF) and tested at 28 days. Various tests such as compressive, split tensile strength, rebound hammer and ultra-sonic pulse velocity tests were conducted on the normal and CPF lined concrete. The results indicate that CPF concrete performed better than IMF concrete in all aspects. From the test results, the use of CPF liner in different grade of concrete (M20&M40) improved the mechanical properties due to the formation of strong and dense Cover-Crete.***

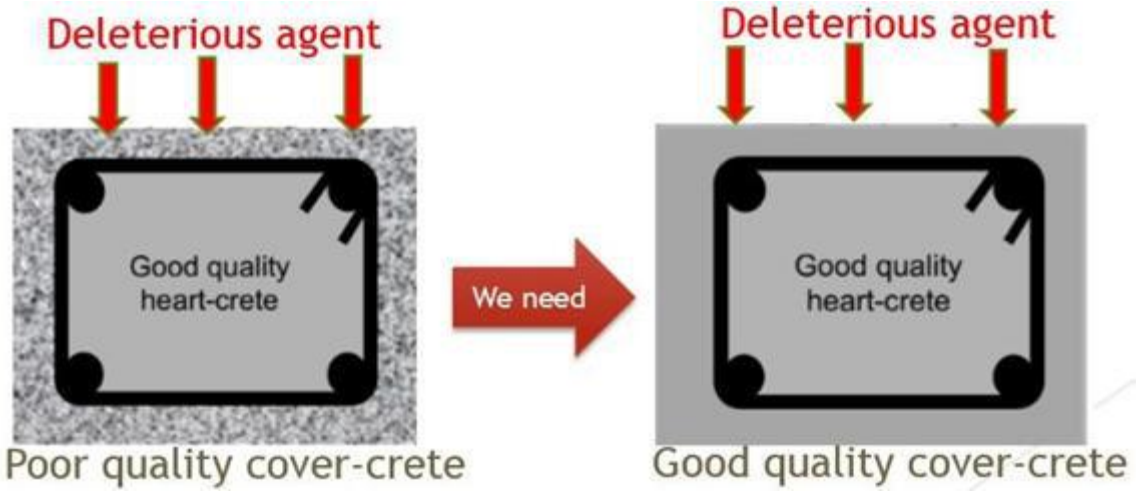
Keywords: Controlled permeable formwork, Concrete, Properties

1. Introduction

General

The quality of cover zone has a major influence on the durability of reinforced concrete elements. Cover zone forms the first line of defence against either physical or chemical deterioration. Aggressive agents penetrate into concrete through surface zone, thus the transport properties of this zone will determine the rate of penetration into the core concrete and hence its lifespan.

On the contrary, the surface of the concrete is more vulnerable to poor curing and compaction than the concrete in the heart of the section .therefore, a well compacted, dense, hard & strong concrete surface zone with low permeability and low diffusivity are preferable for durable concrete.



Showing Poor and Good quality of cover concrete

2. Existing Problems

The commonly used formworks are made from plywood or steel are essentially impermeable to air & water. When the fresh concrete is subjected to compaction by internal needle vibrator, the air and water migrate to the interface of concrete and formwork, which normally get trapped at the formwork interface. The water which reaches the interfaces the effective water- cement ratio in the cover region. Visually, this may be evident on all concrete surfaces through the presence of blowholes and pin holes following formwork removal. This is really serious problem because the first line of defence of all structural elements against carbonation, chlorides frost and abrasion, is the cover zone, which incidentally poor in quality compared to core concrete. This situation is

Case Studies in Construction Materials
Volume 16, June 2022, e00838

Case study

The effect of permeable formwork on durability and corrosion performance of concrete

S. Kandasamy [a], P. Gowdhamramkarthik [b], S. Syed Ibrahim [c], R. Subashchandrabose [d], K. Thulasirajan [e]

https://doi.org/10.1016/j.cscm.2021.e00838

Abstract

The longevity of any reinforced concrete element is determined by the quality of the cover concrete. The only way for aggressive chemicals to get into the structural components and cause rebar corrosion and other types of damage is through the cover concrete. The controlled permeable formwork (CPF) liner is a unique approach for enhancing the quality of cover concrete. This liner permits surplus water and trapped air to escape while keeping the cement and fine particles in place on the concrete surface. Due to the modification, the water-cement (w/c) ratio is reduced, cement content is increased and surface porosity in the concrete cover zone is reduced. The influence of CPF liner on durability property and corrosion resistance of reinforced concrete was investigated in this study. Concrete samples were cast against a CPF liner and impermeable formwork (IMF) at three different water-cement ratios (0.47, 0.40, and 0.33). The rapid penetration of chloride, ingress of chloride, migration of chloride and accelerated corrosion were all examined at various ages. The results showed that CPF concretes exhibited good resistance to chloride ion intrusion of 46–56%. Furthermore, when casting of concrete is done with CPF liner, the time it takes for crack is 1.5 times longer than when concrete is cast against IMF.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Study on Flexural properties of folded plates covered with GGBS replaced ferrocement concrete

S.Sameer[1], P. Dhanabal[2], P. Narendra Reddy[3] and P. Hema Kumar[4]

Assistant Professor, Department of Civil Engineering, Annamacharya Institute of Technology and science, Tirupati, Andhra Pradesh, India[1,2,3,4]

A B S T R A C T

The purpose of this study is to evaluate suitability and flexural behavior of ferro-cement in folded plates. Ferro cement is one of the building materials that is emerging as a replacement for the traditional RCC in many respects. Ferro cement is the future of the low cost houses and precast houses. Folded plates are the economical and asthetic solution for longer span roofs. This project incorporates the benefits of both Ferro cement and folded plates. In ferrocement , cement is partially replaced with GGBS. The trough style Ferro cement folded plates of size 0.6 m x 1.80 m x 0.15 m are cast in consideration of various journals & RCC folded plates when fixing dimensions. properties of the materials used for casting are tested and the compressive strength of the mortar used is tested, the test is performed at 1:2 cement: sand ratio and 0.35 water cement ratio. The specimen is cast with a 2 mm opening stainless steel mesh and 2 layers are laid on the front and back sides of 6mm dia 150m of spaced skeleton steel. Cast specimens are tested for 28 days in loading frame strength and the results are compared with analytical analysis The use of ANSYS for load vs deflection and the suitability of the application of ferro-cement in folded plates are studies. The test results show good results, finally with low expenditure and low self-weight Ferro cement structures being a good alternative to RCC.

Keywords: Ferro-cement, Flexural behaviour, folded plates, ANSYS, suitability of ferro-cement in folded plates, skeleton steel.

1. Introduction

1.1 Ferrocement

The term "Ferro cement" has been used by extension to other composite materials, including those containing no cement or ferroceous content (R. Mohana et al., 2021) : (Ren Xin and Pengfei Ma. 2021): (Abeer M. Erfan et al., 2021) : (Fatimah H. Naser et al., 2020) : (T. Chaitanya Srikrishna and T.D. Gunneswara Rao, 2020) : (Hosein Naderpour et al., 2020). Ferrocement is a system of reinforced mortar or plaster spread over a metal mesh sheet, woven with extended metal or metal fibers and tightly spaced thin steel rods such as rebar, metal widely used iron or other form of steel (M.S. Deepak et al., 2020) : (I.A. Sharaky et al., 2020) : (Ubaid Ahmad Mughal et al., 2019) : (Ru Mu, Peng Xing et al., 2019) . Ductility was found to be strongly influenced by the form of mesh reinforcement (Ibrahim G. Shaaban et al., 2018). Many ferrocement beams displayed higher loads of serviceability compared to control specimens (Dimas Smith et al., 2021) : (Majid Jafar Sada et al., 2021) : (Wenhu Zhao et al., 2021). However, specimens reinforced with expanded metal mesh often reached their serviceability loads prior to the initiation of the first crack, while other specimens reinforced with welded wire mesh formed the first crack before reaching their serviceability load (Juby Mariam Boban et al., 2021) : (Muazzam Ghous Sohail et al., 2021) : (M. Amala, Lenin Dhal et al., 2021) : (Ibrahim G. Shaaban et al., 2018). The ultimate load is roughly twice that of the first crack load. The contribution of the bamboo strips to the mortar and wire mesh of the theoretical final load capacity of the slab is approximately three times higher corresponding to the experimental final load capacity (Oscar Javier Sandoval et al., 2021) : (Sarga S et al., 2021) : (Linda Giresini et al., 2021) : (S. Jeeva Chithambaram

* *Corresponding author*.. P. Dhanabal
E-mail address: dhanabalgce@gmail.com

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Study on The Development of High-Density Concrete with Variouscoarse Aggregate and Silica Fume

P. Dhanabal[1], S.Sameer[2], P. Narendra Reddy[3], P. Hema Kumar[4]

[1,2,3,4]Assistant Professor, Department of Civil Engineering, Annamacharya Institute of Technology and science, Tirupati, Andhra Pradesh, India

ABSTRACT

This study deals with finding an optimal locally available coarse aggregate for the production high density concrete. Magnetite, shonkinite and dolerite were identified through consultation with geologists in salem. All the mentioned aggregates had its specific gravity more than that of conventional aggregate. The aggregates were then manually crushed to the required size. A mix design (volume mix) was arrived at for the different aggregates and the cubes were casted. The slump was around 50mm for all the three mixes, but the compressive strength and density were not the same. Magnetite mix had the highest compressive strength and density, followed by dolerite mix and finally shonkinite mix. Taking into consideration the availability and quality of the aggregates, the dolerite mix was selected. And further testing to find its bond strength, split tensile strength and flexural strength has been planned for the dolerite mix. To increase the density further a study on the utilization of silica fume has also been included.

Keywords: silica fume, high density concrete, concrete properties.

INTRODUCTION

Concrete, composed of portland cement, sand, aggregate (stones, gravel, etc.), and water, is one of the most common materials used in the construction of commercial buildings. Its properties make concrete an excellent choice for structures, cladding systems and floor slabs. On the other hand, concrete is also widely used for radiation shielding in radiotherapy facilities and nuclear reactors, and for the prevention of radiation leakage from radioactive sources, as well. Although, aggregate has been basically considered as an inert, inexpensive material, it is not truly inert and influences the performance of the concrete due to its physical and sometimes chemical properties. Concrete is a very strong material when compressed. However, it is extremely weak in tension. The strength and other properties of concrete are dependent on how the above-mentioned four ingredients are proportioned and mixed. The maximum resistance that a concrete structure will sustain, when loaded axially in compression in a testing machine at a specified rate, is measured as the compressive strength. High density concrete or heavy weight concrete is the concrete, which should have density greater than 2600kg/m3. High density concrete can be made from natural heavy weight aggregates such as barites, magnetite, hematite etc. Apart from the replacement of aggregates, the other way to produce HDC is by the addition of Iron balls, this increases the density of concrete significantly proportionately the cost of manufacturing HDC would also increase. Heavy weight or high density concrete can be designed in same way as normal weight concretes, but its higher weight must be considered with respect to the load-rated capacities of transport vehicles, roadways and installation cranes. Transporting high-density concrete for extended periods of time can result in excessive consolidation. or packing. So, additional density means that smaller volumes can only be transported and placed. The formwork for conventionally placed high-density concrete must be carefully selected and inspected, as it will be subjected to considerably higher stresses than comparable forms for ordinary concrete.

APPLICATIONS OF HIGH DENSITY CONCRETE

- Nuclear power plants, Nuclear weapon development and Radiotherapy treatment rooms to shield radiation.
- Precast concrete used in storage facilities of radioactive wastes.
- Ballasts for offshore pipelines.
- Breakwater structures
- Counterweights
- Sound or vibration attenuation walls

OBJECTIVE OF THE STUDY

The main objective of this investigation is

- To study the properties of locally available aggregates of high density. To study the behaviour as well as properties of HDC in fresh and hardened state. To compare the compressive strength of HDC produced by replacement of coarse aggregates and choosing the best aggregate after factoring in all the data. To study the effect of silica fume in the production of HDC. To study the other mechanical properties such as

Journal of Modern Materials
ISSN: 2456-4834
Volume 9, Issue 1, pp. 26-35, 2022
DOI: https://doi.org/10.21467/jmm.9.1.26-35

RESEARCH ARTICLE

Analytical and Experimental Study on Flexural Behavior of Beam-column Joint with Addition of Polypropylene Fibers

P. Dhanabal*, P. Narendra Reddy, K.S. Sushmitha

Department of Civil Engineering, Annamacharya Institute of Technology and Science, Tirupati, Andhra Pradesh, India

*Corresponding author's email: dhanabalgce@gmail.com

Received: 5 May 2021 / Revised: 24 May 2022 / Accepted: 31 May 2022 / Published: 02 June 2022

ABSTRACT

Key scope of this research is evaluation of actions of beam to column joints under the impact load acting on it. The beam-column joints, a common area between frame beams and columns. It is the most critical zone to ensure the global response of such momentary resistance structures. Several approaches have been attempted over the years by many civil engineers and practitioners to improve the deficiently thorough joint in between beam and column. The highest bending moment and shear forces in the framed structures are at the junction area. As a result, that joint between beam and column is one of a collapse zone. Joint in outer is more important among the beam-column joints. The effect may be caused by a weight falling on the design object or possibly falling off the design object and hitting the hard surface. In this work, an emphasis has been made to understand the joint vulnerability against impact loads and its behavior is analyzed using the ANSYS software. From this experimental program observed that, impact resistance in RCC beam to column joints can be improved by improving stiffness by added polypropylene fibers and energy absorption can also be improved.

Keywords: Beam Column Joint, Impact load, Stiffness, addition of fibers, ANSYS

1 Introduction

We all know, A joint in beam to column was extremely important zone. Structure of concrete with reinforcement framed where the components converge into x, y, z direction and also it maintains the integrity of the system and the transition forces present at the ends of the members [1-4]. Carbon fibre ropes have been demonstrated to be an effective external strengthening reinforcement technique. [5]. The stiffness increased by 236.7 percent when compared to the control beam-column joint when using an X-shaped rope with two ropes on each side of the beam and two on each side of the column. [6]. The usage of additives substantially aids in the improvement of expandability. [7-8]. Under substantial displacement reversals, the joint in the ECC specimens remained intact, whereas the joint in the concrete specimens showed serious cracking [9]. The neural network model accurately predicts the shear strength of the Exterior Beam-Column joint [10]. RBSJ specimens respond similarly to the origin specimen, showing that the proposed joint was practical in precast RC framed structures [11]. Steel rebar inside the joint core performed admirably, and forces were properly transferred to the column [12-13]. FRP composites in beams improve stiffness and strength while reducing environmental concerns [14]. The UHPFRC strengthening scheme outperformed the UHPFRC laminates in terms of enhancing the shear strength of tested beams [15-16]. The Poisson's ratio and rebar slippage generated severe bond deterioration in joints with a low volume-stirrup ratio [17]. Vertical bars prevented the column-joint contact from bending, but failure occurred at the junction in this research. Diagonal bars can also help to avoid joint failure [18-20]. The addition of cementitious materials and fibre can aid to improve the tensile strength of a concrete part [21]. BFRP improves joint energy dissipation capability [22]. The beam-column connection shifts the failure mechanism from joint shear failure to flexural failure [23]. HPFRCC in conjunction can be an effective

Revista Ingeniería de Construcción RIC
Vol 37 Nº2 2022 www.ricuc.cl
DOI: 10.7764/RIC.00028.21

ENGLISH VERSION

Effect on properties of ferrocement blended geopolymer element due to thermal impact

Efectos en las propiedades de elemento de geopolímeros mezclados con ferrocemento debido al impacto térmico

P. Dhanabal[1]* https://orcid.org/0000-0002-4709-6850
K.S. Sushmitha* https://orcid.org/0000-0002-8472-2486
P. Narendra Reddy *

* Department of Civil Engineering, Annamacharya Institute of Technology and Science, Tirupati, Andhra Pradesh, INDIA.

Fecha de Recepción: 20/11/2021
Fecha de Aceptación:13/07/2022
Fecha de publicación: 02/08/2022
PAG 228-241

Abstract

Scope of study is to evaluate durability characteristics of ferrocement blended geopolymer mortar after subjected to fire. ferrocement element is made of geopolymer mortar and its fire resistance behaviour is compared with the conventional ferrocement element made of cement mortar. Previously, the molar concentration of sodium hydroxide solution used for preparing geopolymer mortar is standardized by finding the residual strength of mortar cubes prepared by various NaOH concentrations. The residual flexural strength of Ferro-geopolymer concrete and normal Ferrocement specimens of various volume fractions (1.5 %, 1.8 %, 2.1%) are exposed to three different temperature levels for two hours from 300 degree Celsius to 900 degrees Celsius are determined and compared. For the same volume fractions, the specimens are exposed to elevated temperature of 900°c to find the residual impact strength. The fire resisting characters in terms of residual flexural strength, residual impact strength and loss of weight after fire exposure are determined. In all aspects, Ferro-geopolymer concrete shows superior performance than the conventional ferrocement.

Keywords: Fire resistance; ferrocement concrete; geopolymer concrete; flexural strength; temperature of concrete.

Resumen

Este estudio evalúa las características de la durabilidad del ferrocemento mezclado con mortero de geopolímeros después de ser sometido al fuego. El ferrocemento fue preparado con mortero de geopolímeros y se comparó con el ferrocemento convencional preparado solo con mortero de cemento. Previamente, se estandarizó la concentración molar de la solución de hidróxido de sodio usada para preparar el mortero de geopolímeros mediante la resistencia residual de los cubos de mortero preparados con diversas concentraciones de NaOH. Se determinó y comparó la resistencia residual a flexión de probetas de hormigón preparadas con diferentes porcentajes en volumen (1,5%, 1,8% y 2,1%) de ferro-geopolímeros y ferrocemento, las que luego fueron sometidas durante dos horas a tres niveles de temperatura entre los 300°C y 900°C. Además, probetas con los mismos porcentajes en volumen fueron expuestas a temperaturas sobre los 900°C con el objetivo de determinar su resistencia residual al impacto. Se determinaron las características de la resistencia al fuego de las probetas en términos de Resistencia residual a flexión, resistencia residual al impacto y pérdida de peso. En todos los aspectos, las probetas preparadas con ferro-geopolímeros mostraron un comportamiento superior a las probetas convencionales de ferrocemento.

Palabras clave: Resistencia al fuego; hormigón de ferrocemento; hormigón de ferro-geopolímeros; resistencia a flexion; temperatura del concreto.

1. Introduction

Fire resistance of construction is most important research are in current century. There are many studies which concentrate enhancement of concrete firefighting capacity covered with tubes steel and natural zeolites and other special materials (Min Yu et al., 2020) : (Alexandra et al., 2021) : (Shan Li et al., 2021). Under extreme fire scenarios, this large temperature creep strain may control deformation retort and appropriately accounted for fire resistance learning (Kodur, 2021). furnace temperature improved 400 °C to 600 °C, compressive strength decreased. Foam concrete with ceramic and MA has a high potency on fire confrontation than regular concrete (Awoyera., 2020). Due to thick and dense microstructure, high performance FRC beams be particularly vulnerable due to fire-induced spalling (Srishti et al., 2020). The temperature in reinforcing steel bars was unaffected by section magnitude reduction in element until 90 minutes after exposure to fire (Fabrício Longhi Bolina et al., 2020). As the temperature rises, FRC tensile strength goes down. With steel fiber FRC's tensile property is higher than that of FRC without steel fibres (Heyang et al., 2020). Compressive strength decreased as temperature increased, whereas residual strength increased (Binmeng et al., 2020). Post-earthquake fire prevention will be lower in RC structures that have suffered moderate/severe earthquake damage (HugoVitorino et al., 2020). Incorporating 0.25 percent MWCNTs and 0.2 percent PP fibers into composite, high fire confrontation cement mortar might be made (Peem et al., 2021). Under extreme fire exposures, the degree of spalling impact on concrete beams fire resistance (Venkatesh et al., 2021).

[1] ***Corresponding author:***
Annamacharya Institute of Technology and Science, Tirupati, Andhra Pradesh, INDIA.
E-mail: dhanabalgce@gmail.com

Journal of Modern Materials
ISSN: 2456-4834
Volume 8, Issue 1, pp. 30-39, 2021
DOI: https://doi.org/10.21467/jmm.8.1.30-39

RESEARCH ARTICLE

Study on Properties of Concrete with Iron Ore Tailing and Glass Waste

Sushmitha KS[1], Dhanabal P[2*]

[1] Department of Transportation Engineering & Management, Reva University, Bangalore, Karnataka, India
[2] Department of Structural Engineering, Government College of Engineering, Salem, Tamil Nadu, India

* Corresponding author email: dhanabalgce@gmail.com

Received: 01 May 2021 / Revised: 07 September 2021 / Accepted: 07 November 2021 / Published: 04 December 2021

ABSTRACT

The aim of this research is to test the characteristics of concrete by substitute fine aggregate with iron ore tailings and partial glass powder as in the place of cement. Concrete with waste products such as glass powder and iron ore tailings offer technical, economic and environmental advantages. In this experimental investigation, glass powder is replaced with cement by 10%, 20% and 30% and iron ore tailings with fine aggregates by 30% which is the optimum percentage. To study the role of glass powder and iron ore tailings combination in concrete. The properties such compressive strength, flexural strength, tensile strength and also durability parameters likely water absorption investigation for M40 concrete is carried out with different percentages of glass powder by keeping the iron ore tailings percentage constant. At 30% glass powder substitution as cement and sand with IOT increases concrete effectiveness. The concrete with 10% glass powder & 30% iron ore tailings showed a higher strength compared to the conventional mix for 28 days. Concrete mix containing 10% GP and 30% IOT showed higher flexural strength of 5.05 MPa for 28 days. Splitting tensile strength value is also increasing i.e., for 10% glass powder and 30% IOT, obtained splitting tensile strength was 4.48 MPa and modulus of elasticity value was has also increased. Water absorption experiment consequences results that water absorption decreases with an increase in GP percentage. The concrete workability tends to decrease when with glass powder content increase. Concrete containing 10% glass powder and 30% IOT showed maximum strength and it is considered as the optimum dosage.

Keywords: Glass powder, Iron ore tailing, Concrete properties.

1 Introduction

Concrete is one of the most unique construction materials. It is also used in rigid pavement in roadways. The scarcity of ingredients (cement and fine aggregate) in concrete is a major issue nowadays. We are in need to found alternate materials in construction. So, in this work we made an attempt of utilising combined of Iron ore tailing as a replacement material for cement and glass waste as a replacement material for cement. Iron ore tailings is one of the mine wastes which is available in India. To minimize the negative impact of IOT on environment and low-cost construction, this can be utilized in concrete production as substitute of fine aggregate [1-5]. The viability of the tailings of iron ore as a substitute material on behalf of FA in the concrete for construction of concrete pavements. The transformation of fly ash and IOT into foaming geopolymer leads to the formation of porous structure encouraging Cu2+ sorption [6-9]. The Size distribution curve of composite binder containing IOT was very close optimization curve. So, By Adding the IOT Packing density increased [10-14]. Water to binder ratio reduced means, it will give maximum strength. Also, IOT Substitution in with nominal percentage increases the compressive strength of concrete [15-18]. Glass powder is a kind of pozzolanic material because it has that nature and characteristics. Use of glass powder has much influence in setting time and cement expansion [19-22]. Concrete with cement replaced by 15% and 30% glass powder gives more strength as well as lowest porosity [23,24]. The maximum compressive strength (136 MPa) was arrived when 20 % glass waste added in RPC-Reactive

International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 09 Issue: 08 | August 2022 www.irjet.net p-ISSN: 2395-0072

STUDY ON PROPERTIES OF CONCRETE WITH PARTIAL REPLACEMENT OF CEMENT BY USING PUMICE STONE POWDER

V.Sathish[1], P. Dhanabal[2], P. Narendra Reddy[3] and A. Anil

[1M]M.Tech student, Annamacharya Institute of Technology and Science, Tirupati, Andhra Pradesh.
[2-4]Assistant Professor, Department of Civil Engineering, Annamacharya Institute of Technology and Science, Tirupati, Andhra Pradesh.

Abstract - An The main scope of this study is to find various properties of concrete with replacement of cement by pumice stone powder. Now a days many of research are going to find the best possible alternate for cement in concrete. In this work pumice stone powder was partially replaced as cement in the range 10%, 20%, 30%, 40%. The fresh and hardened properties of concrete with pumice stone is to be compared with conventional concrete. Pumice powder, generated by the stone processing industry, is an inert by-product possessing excellent cementitious characteristics. Utilization of pumice powder in concrete can reduce the cost of construction and at the same time address the waste disposal problem. This study is focused on the strength properties of pumice powder in pozzolan concrete .The results indicate that the fresh and hardened properties of the modified mix with pumice stone powder as improved considerably. The use of pumice powder as a substitute for cement in the concrete mixture also has the ability to improve the compressive, and tensile strength of concrete.

Key Words: Fresh properties, hardened properties, pumice stone powder and cement replacement.

1.INTRODUCTION

A naturally occurring light aggregate known as pumice stone, which resembles a sponge, was created when molten lava swiftly cooled and solidified. Lightweight concrete has been used by ACI for more than 2000 years (American concrete institute, 2003). Constructions made of structural lightweight concrete are still fairly widespread, despite being used much less frequently than ordinary weight concrete today. In comparison to conventional cement, pumice powder has benefits such as increased thermal and acoustic insulation, fire resistance, abrasion resistance, decreased unit weight, hydration heat, drying shrinkage, and autoclave expansion. It also has advantages in terms of improved sulphate resistance, sea water resistance, acid resistance, electrical resistivity, and decreased alkali silica reaction expansion and porosity.

1.2PUMICE STONE POWDER

A naturally occurring lightweight aggregate known as pumice stone is created when molten volcanic material suddenly cools. Viscous magma that is primarily siliceous and rich in dissolved volatile components, particularly water vapour, erupts from volcanoes during eruptions to produce pumice.

Pumice can be utilised as a lightweight aggregate since it is both light and robust. When molten lava erupted from a deep location beneath the earth's crust, gas was able to escape, which is why they were so light. Due of its small weight and porous texture, pumice can float for a long time—sometimes years—before it ultimately gets wet. The bulk density of pumice, a light-colored, froth-like volcanic glass, ranges from 500 to 900 kg/m3.

1.3 Objectives of this study

This study's primary goals are to compare concrete's fresh and hardened qualities when pumice stone powder is used in place of cement.

2. METHODOLOGY

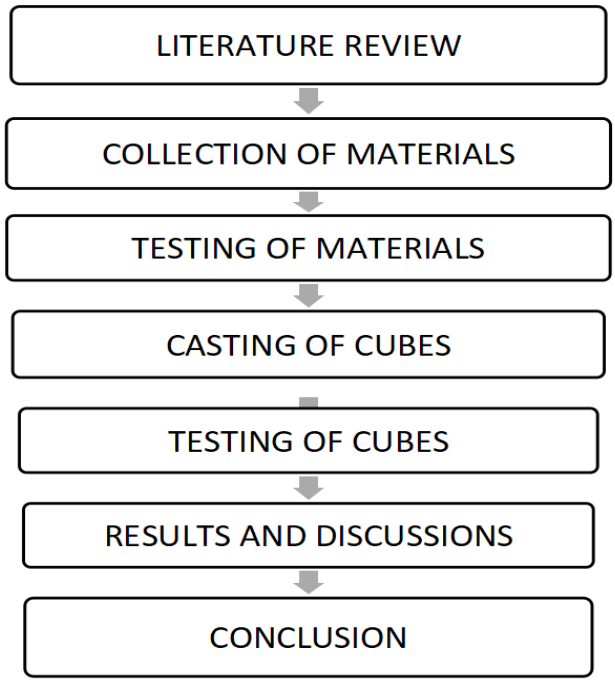


Figure 1: Methodology

Analysis of Coupling Beam Embedded with Reinforced Concrete Shear Walls

P. Vishnu Priya, Assistant Professor, Annamacharya Institute of Technology and Sciences Tirupati & India, vishnupriya0026@gmail.com

Nithya S, Assistant Professor, Al Ameen Engineering College Kulappully & India, nithyasivadas2018@gmail.com

Abstract Most of the tall reinforced concrete structures are subjected to horizontal force due to wind and seismic loads. In order to resist these forces, the efficient method is to provide shear wall. The shear walls which are having openings such as doors, windows, corridors, elevator wells are commonly designed by providing a beam in between them. Such shear walls are called coupled shear walls. These are built in full height of the structural building. Shear wall with coupling beam shows more energy dissipation when compared to others. This paper presents a study on the behavior of coupling beam embedded in shear wall. The study has been carried out using ABAQUS-CAE

Keywords —conventional shear wall, concrete coupling beam, coupled shear wall, Linear analysis, Finite element method, ABAQUS-CAE

I. INTRODUCTION

During the past few years, a number of researches were carried out to developing the solutions to resists the seismic lateral forces. The important thing we need to consider here is the life safety in case of high intensity earthquake and minimum damages to the structure. From the all-possible solutions, the concrete shear wall which controls the horizontal displacements and storey drifts has the good capability to resist these lateral forces.

The high level of detailing and the provision of sufficient anchorage of steel reinforcement in the connected walls are also the problems we have to face when designing a concrete coupled shear walls. To overcome the drawbacks of concrete coupling beam, steel coupling beams can be used and the structure is known as steel coupled shear wall system. In this, the steel coupled shear wall dissipate more energy when compared to the concrete coupled shear wall by yielding.

II. LITERATURE REVIEW

In the experiment conducted by Wan-Shin Park and Hyun-Do Yun [1], the main parameter they considered was the ratio of the coupling beam strength to the connection strength. The result shows that designing a coupling beam as shear yielding member is better because shear critical coupling beam dissipates more energy than flexure critical coupling beam.

Daniel J. Borello and Larry A. Fahnestock [2] carried out an experiment on the steel coupling shear wall with the two test variables degree of coupling and plastic strength. They examined thirty-two coupled shear wall structures with criteria such as difference in degree of coupling, coupled length and height of the structure. They found that analytical and numerical results are similar when they studied those structures under nonlinear static numerical simulations.

F. Morelli, et al [3] analyzed the reinforced concrete coupling beam with two side steel columns. The behavior of the dissipative coupling system was studied. The experiment was carried out on a total of eight specimens, and they all showed a good dissipative capacity without any serious damages to the concrete wall. Also, the test results shows that angle connection influence the overall behavior.

Experiments were conducted by Wan-Shin Park and Hyun-Do Yun [4] to determine the factors which is influencing the bearing strength of the steel coupling beam wall connections. They found that there was a relation between degree of conservatism and the width of the embedded steel coupling beam sections. And also, they notice that the conservatism increase was due to increase in the concrete bearing stress.

J. C. D. Hoender kamp [5] carried out an experiment by taking two parameters, the degree of coupling and the peak shear demand. Analysis of single shear wall and mixed shear wall structures were done to determine the influence of both the walls on the degree of coupling and on the peak shear demand. The result shows that the mixed shear wall structures exhibit more degree of coupling.

Motamarri Sarat Chandra and B. Sowmya [6] conducted studies on shear walls in multistorey structures with varying

 DOI : 10.35291/2454-9150.2021.0596

Analysis & Designing of Five Star Hotel building by using E-Tabs

K. Harshitha[1] P. Vishnu Priya[2] B. Baby[3] A. Kalpana[4] K. Sai Abhinav[5]
[1]PG Student [2]Professor [3,4,5] Assistant Professor
[1,2,3,4,5]Department of Civil Engineering
[1,2,3,4,5]Annamacharya Institute of Technology and Sciences(A), Andhra Pradesh, India

Abstract— Structural Analysis is a branch which involves in the determination of behaviour of structures in order to predict the responses of different structural components due to effect of loads. Each and every structure will be subjected to either one or the groups of loads, the various kinds of loads normally considered are dead load, live load, earth quake load and wind load. ETABS (Extended Three Dimensional Analysis of Building Systems) is a software which is incorporated with all the major analysis engines that is static, dynamic, Linear and non-linear, etc. and especially this Software is used to analyze and design the buildings. Our project "Analysis and Design of Commercial building using ETABS software" is an attempt to analyze and design a commercial building using ETABS. A G+10 storey building is considered for this study. Analysis is carried out by static method and design is done as per IS 456:2000 guidelines. Also an attempt has been made to design the structural elements manually. Drawing and detailing are done using Auto CAD as per SP 34.

Keywords: Building design, Analysis, E-tab

I. Introduction

The term building in Civil Engineering is used to mean a structure having various components like foundation, walls, columns, floors, roofs, doors, windows, ventilators, stairs lifts, various types of surface finishes etc. Structural analysis and design is used to produce a structure capable of resisting all applied loads without failure during its intended life. Prior to the analysis and design of any structure, necessary information regarding supporting soil has to be collected by means of geotechnical investigation. A geotechnical site investigation is the process of collecting information and evaluating the conditions of the site for the purpose of designing and constructing the foundation for a structure. Structural engineers are facing the challenges of striving for most efficient and economical design with accuracy in solution while ensuring that the final design of a building and the building must be serviceable for its intended function over its design life time. Now a day's various software packages are available in market for analyzing and designing practically all types of structures viz. RISA, STAADPRO, ETABS, STRUDL, MIDAS, SAP and RAM etc.

II. Brief Description of Software – ETABS2015

ETABS is an engineering software product that caters to multi-story building analysis and design. Modeling tools and templates, code-based load prescriptions, analysis methods and solution techniques, all coordinate with the grid-like geometry unique to this class of structure. Basic or advanced systems under static or dynamic conditions may be evaluated using ETABS. For a sophisticated assessment of seismic performance, modal and direct-integration time-history analyses may couple with P-Delta and Large Displacement effects. Nonlinear links and concentrated PMM or fiber hinges may capture material nonlinearity under monotonic or hysteric behavior. Intuitive and integrated features make applications of any complexity practical to implement. Interoperability with a series of design and documentation platforms makes ETABS a coordinated and productive tool for designs which range from simple 2D frames to elaborate modern high-rises.

III. Literature Review

VaralakshmiV et.al (2014) analyzed a G+10 storey Commercial building and designed the various components like beam, slab, column and foundation. The loads namely dead load and live load were calculated as per IS 875(Part I & II)-1987 and HYSD bars i.e. Fe 415 are used as per IS 1986- 1985. They concluded that the safety of the reinforced concrete building depends upon the initial architectural and structural configuration of the total building, the quality of the structural analysis, design and reinforcement detailing of the building frame to achieve stability of elements and their ductile performance.

IV. Designing of Model

A. Framing of Model

Fig. 1**:** 3D model in ETABS

B. Load Cases

Name	Type	Self-weight	Auto-Load
Dead	Dead	1	
Live	Live	0	
Superimposed Dead	Superimposed Dead	0	
E_{qx}	Seismic	0	IS1893 200
E_{qy}	Seismic	0	IS1893 200

Table. 1: Load Cases

International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)

| e-ISSN: 2319-8753, p-ISSN: 2320-6710| www.ijirset.com | Impact Factor: 7.569|

|| Volume 10, Issue 7, July 2021 ||

|DOI:10.15680/IJIRSET.2021.1007110|

An Experimental Investigation on Construction of Tree Bench by Using Plastic Bottles as Eco Bricks

K.Revanth Kumar[1], S.Sunil Kumar[2], K.Tejaswini[3], K.Rushi Kesh[4], V.Santosh[5], S.Ruhizeba[6], M.Sri Priya[7]

U.G. Student, Department of Civil Engineering, VISWAM Engineering College, Madanapalle, A.P, India[1,2,3,4,5,6]

Assistant Professor, Department of Civil Engineering, VISWAM Engineering College, Madanapalle, A.P,, India[7]

ABSTRACT:The main objective of this project is to use the waste plastic bottles in tree bench construction which reduces the environmental pollution.Eco-bricks are a simple, low-tech solution to our plastic that follows the Earth's ancient example in carbon care. Waste Polyethylene Terephthalate (PET) bottles packed with manufacturing sand has been successfully used in making Plastic bottle as eco bricks. Experimentally Eco Brick is given more Compressive strength when compared to Mud clay burned brick . The Project is adopted with the complete 1:3 cement mortar , 0.4 water cement ratio and also conducted Compressive strength at 7,14,28 Days for cement mortar cubes .For outdoor purpose, we constructed an Tree Bench with eco bricks. Comparing the cost estimation with Eco Bricks its saving half of the amount in Conventional mud bricks.

KEYWORDS:Waste Polyethylene Terephthalate (PET), Conventional mud bricks, Eco Bricks.

I. INTRODUCTION

Throughout the world, plastic waste disposal is a major concern since it is being nonbiodegradable in nature and hazardous, because of its potential harmful effect on human health and to the environment. Taking into account the increase of pollution new concept of eco bricks has been introduced. When these bottles are filled with sand, gravel and cork or wood particles, they have great insulating capability. An ecobrick must…Be a short-term building block that can be indefinitely reused in the short term.Compact, secured and store plastic safely out of industry and out of the biosphere for the long-termResult in more plastic and CO2 being subtracted from the biosphere than was added by the processRaise the individual and collective ecological consciousness of those involved in the processContributing to the maintenance and encouragement of biodiversity

II. RELATED WORK

Mojtaba et al. [1] Concluded that reusing the plastic bottles as the building materials can have substantial effects on saving the building embodied energy by using them instead of bricks.
Shilpi et al. [2]Plastic is non-biodegradable, toxic, highly resistant to heat and electricity (best insulator) and not recyclable in true sense, plastic PET bottles use in bottle brick technique.
Puttaraj et al. [3] examined that efficient usage of waste plastic in plastic-soil bricks has resulted in effective usage of plastic waste and thereby can solve the problem of safe disposal of plastics. It has been proven that the use of plastic bottles as innovative materials for building
Pratima et al. [4] studied that plastic bottles wall have been less costly as compare to bricks
VikramPakrashi et al. [5] examined Eco-brick is a viable resource for construction purposes with a number of possible applications. The bricks are relatively easily manufactured with controlled weight and packing.
YahayaAhmade et al. [6] said that the structure has the added advantage of being fire proof, bullet proof and earthquake resistant, with the interior maintaining a constant temperature of 18 degrees C which is good for tropical climate.

Volume 50, Part 5, 2022, Pages 600-606

Delineation of groundwater potential zones in semi-aridregion (Ananatapuram) using geospatial techniques

Veeraswamy Golla [a], Pradeep Kumar Badapalli [b], balaji etikal [c], Vidya Lakshmi sivakumar [d], Sai Krishna Telkar [a]

Show more

https://doi.org/10.1016/j.matpr.2021.02.239 ↗

Abstract

The aim of the examination is undertaken to delineation of groundwater potential areas demarked by geospatial technologies in semi arid region, Anantapur district of Andhra Pradesh. From the processing of LANDSAT data processed in GIS software, prepared a various thematic maps (Geology, Geomorphology, Lineaments, Lineaments density, Drainage, Drainage density, LU/LC, Soils groundwater potential maps). Majority of the study are in four categories viz., poor 28.89(9.53%)km2, moderate 145.73(48.09) km2, good92.57 (30.55%)km2 and very good 36.13(11.92%)km2, groundwater potential zones.The groundwater potential map which is helpful for comprehend, planning and management activity of current study area.

Introduction

Groundwater is an important natural resource for the drinking, to the human beings, which it is stored in the subsurface as aquifer form and serves as the agriculture and industrial purpose [1]. The fresh water is getting more pressure for meeting the human requirement [2]. Groundwater highly consumed 75 to 80%in India[3]. Semi-arid region ground water is one of the primary need for meeting the survival of living organisms and management activities like agriculture, potable water supply and industries[4]. In India Semi-arid region naturally water scarcity in different seasons due to over exploitation of

An Experimental Study on Fly Ash Based Concrete with Aluminium as Partial Replacement of Cement

M.Shyam Sundar[1] K Sai Abhinav[2] Dr J.Guru Jawahar[3] A.Anil[4]
[1,2,4]Assistant Professor [3]Professor
[1,2,3,4]Annamacharya Institute of Ttechnology and Sciences, Tirupati, India

Abstract— Concrete is one of the construction materials which is used on a large scale and it is generally includes Portland cement as the primary ingredient for making concrete. During concrete curing the heat generated is called heat of hydration. when water and cement react it will be an exothermic reaction. Keeping in view of the strength and durability of eco-friendly concrete, this investigation is mainly focused on the strength properties of M25 grade of concrete blended with fly ash and aluminum. In this study fly ash replacement level was kept at 25% and aluminium varied from 5% to 15% percentage. In this study, the parameters like unit weight, compressive strength and ultrasonic pulse velocity of concrete were studied after 7 and 28 days of curing. It is observed that the increase of aluminum increase the strength properties of concrete. It is due to the contribution of aluminum reaction in the concrete. The M25FA_AL15 attained almost strength properties of M25CC.

Keywords: Aluminum Powder, Flyash, Compressive Strength, Ultra Sonic Pulse Velocity

I. INTRODUCTION

Reducing carbon dioxide (CO_2) emissions is of prime importance for the industries, including the cement industries, as the major problem associated with these emissions is greenhouse effect which is considered to rise the global temperature and ultimately results in climate change. There's been 3% annual rise in production of cement. About one ton of CO_2 will be released into the atmosphere upon manufacturing one ton of cement, which finally leads to global warming.

About 1.35 billion tons annually or about 7% of the total greenhouse gas emissions were being contributed by the production of Portland cement worldwide. Furthermore, it was reported that the concrete structures built using ordinary Portland cement (OPC) in corrosive environments start to deteriorate after a period of 20 to 30 years, even though their designed service life is more than 50 years.

The Aluminum powder is of three types: atomized, flake and granules. In case of a atomized particle all dimensions like length, width and thickness are approximately the same order. In case of aluminium powder containing flaky paricle the length or width of a flake particle maybe several hundred times it thickness. Aluminium powder containing microscopic flake-shaped aluminum particles made out of foil scrap is available in the AAC industry. Highly flammable aero suspensions are prepared from aluminum powder with grain size less than 100µm and particularly with fractions less than 50µm.

II. LITERATURE REVIEW

Selvaraj. R (2015), Gas concrete falls under the category of light weight concrete. The change in volume and voids in concrete mortar is studied by adding aluminum powder to 1:3 proportion of cement mortar with and without alkali solutions. Properties of concrete like sorptivity, water absorption, micro structure, density etc. are examined for gas concrete.

Ahsan Habib, et.al., (2015), in this experiment, for aeration process, the generation method of hydrogen gas was used. Aluminum powder is added to the cement slurry for various percentages of OPC as per the gasification method. Density, water absorption and compressive strength tests were conducted on concrete to estimate the effect on aluminium powder on the mix proportion. In the case of aerated concrete, 0.15% aluminum powder helps in gaining strength.

The present investigation is mainly focused on the strength properties of M25 grade of concrete blended with fly ash and aluminum. In this study fly ash replacement level was kept at 25% and aluminum varied from 5 to 15% percentage.

III. EXPERIMENTAL PROGRAM

A. Fly ash

According to ASTM C 618 (2003), Class F fly ash produced from Rayalaseema Thermal Power Plant (RTPP), Muddanur, A.P was used. The chemical and physical properties are presented in the Table 3.1.

Particulars	Class F fly ash	ASTM C 618 Class F fly ash
Chemical composition		
% Silica(SiO_2)	65.8	
% Alumina($Al2O_3$)	29.0	
% Iron Oxide(Fe_2O_3)	3.2	SiO2+ Al2O3+ Fe2O3>70
% Lime(CaO)	1.1	
% Magnesia(MgO)	1.2	
% Titanium Oxide (TiO_2)	0.6	
% Sulphur Trioxide (SO_3)	0.3	Max. 5.0
Loss on Ignition	0.30	Max. 6.0
Physical properties		
Specific gravity	2.12	
Fineness (m^2/Kg)	360	Min.225 m2/kg

Table 3.1: Chemical and physical properties of Class F fly ash

B. Aluminium

In the present investigation, aluminium brought from Astrra chemicals, Chennai. Specific gravity of aluminium is 2.7

C. Mixture Proportions

In this study, M 25 grade of conventional concrete (M25CC) and M 25 grade of fly ash (FA) and aluminium (AL) blended concrete (M25FA_AL) were manufactured as per IS10262:2019. In M25FA_AL, fly ash was kept at 25% and AL varied from 5% to 15% replacement of cement.

Investigation on High Strength Concrete using GGBS and Silica Fume

D. Nirosha[1], C. Sashidhar[2], K. Narasimhulu[3]
[1]Research Scholar, Department of Civil Engineering, JNTUA, Ananthapuramu, India
[2]Professor, Department of Civil Engineering, JNTUA, Ananthapuramu, India
[3]Research Supervisor, Department of Civil Engineering, JNTUA, Ananthapuramu, India

Abstract

High strength concrete requires a higher cement content, which increases the heat of hydration, leads to the formation of thermal cracks and thus degrades the performance of the structure. An increase in OPC content means an increase in carbon emissions, which is dangerous for the environment. Keeping durability a key factor, current work is done using blast furnace granulated slag (GGBS) and silica fume (SF) as a supplementary cementitious material (SCM). In this study, high strength concrete mix was designed with powder content ranging from 690 kg/m3 to 990 kg/m3 where about 10%, 20% and 30% OPC was replaced by GGBS and SF, to create durability and economic materials. Natural river sand was used and 10mm size coarse aggregate and PCE-based superplasticizer were used as other ingredients in the design. Fresh and hard properties such as workability, compressive strength and concrete density are evaluated using standard test methods. Regression analysis of test results was performed separately on Cement-GGBS and Cement-SF concrete mixes. From the study, it can be found that replacing OPC with SF gives a higher value of compressive strength than the GGBS blend.

Introduction

Concrete is used for a variety of purposes in order to be able to withstand different atmospheric conditions. In such cases, conventional concrete may not exhibit the required quality and durability [1]. Concrete properties such as high strength and high performance require more binder material, but it is known to reduce the carbon footprint of concrete and according to IS - 456:2000 [2], maximum cement content must not 450 kg/cum. Furthermore, just increasing the cement content will not only increase the cost of concrete, but also increase the heat generated during hydration and the shrinkage cracks in the early stage itself. These problems can be solved by incorporating additional binding materials (SCMs) such as fly ash, blast furnace slag (GGBS), silica fume (SF), rice husk ash (RHA), etc. in concrete in order to produce environmentally sustainable concrete [3].

As a result, producing HSC at a lower cost and with lower emissions has received much attention while providing comparable properties. The concept of high strength concrete (HSC) began in the 1970s due to the need for rapid construction. In many cases, HSCs often include high cement content leading to high heat of hydration and shrinkage cracks.

How to Cite:
Reddy, G. M. K., Mounika, M., & Priya, P. V. (2022). Experimental and correlation study of destructive and non-destructive testing on blended concrete with metakaolin and bagasse ash. *International Journal of Health Sciences*, *6*(S2), 13580–13591.
https://doi.org/10.53730/ijhs.v6nS2.8568

Experimental and correlation study of destructive and non-destructive testing on blended concrete with metakaolin and bagasse ash

G. Madhava Krishna Reddy
Assistant Professor, Department of Civil Engineering, GMR Institute of Technology, Rajam, Andhra Pradesh, India
Corresponding author email: madhavakrishna.g@gmrit.edu.in

M. Mounika
Assistant Professor, Department of Civil Engineering, Gurunanak Institute of Technical Campus, Khanapur Village, Manchal, Ibrahimpatnam, Telangana, 501506

P. Vishnu Priya
Assistant Professor, Department of Civil Engineering, Annamacharya Institute of Technology and Science, Tirupati, Andhra Pradesh, India

***Abstract*---**The utilization of industrial wastes has been the hub of squander minimization research for environmental, economic and technical reasons. Bagasse is an off-shoot from sugar industries, which is ignited to develop the power needed for numerous activities in the factory. Its high pozzolanic property and the presence of alumina and silica content can enrich the properties of concrete. Metakaolin is a primitive output accomplished by calcinating kaolin clay inside a temperature sort of 650 to 800°C utilized to produce materials with lower porosity, greater strength, denser microstructure, greater resistance to ions improved durability. An experimental investigation has been done on blended concrete with a combined effect of Bagasse ash (B), and Metakaolin (M) with percentages 10%+2.5%, 20%+5%, 30%+7.5%, and 40%+10%, which are designated as B1M1, B2M2, B3M3, and B4M4 respectively were incorporated in Ordinary Portland Cement (OPC). The fresh (workability) and hardened properties (Splitting tensile and compressive strength) of concrete were compared to Control Concrete (CC) and also checked the contrast of non-destructive strength values over destructive testing. It is noted that destructive testing strength values are more and accurate compare to non-destructive because it

Machine Learning-Based Optimization Technique for Forecasting the Solar Radiation

S Jayaprakash[1*], S Soundara Bala[2], G MadhusudhanaRao[3], and R Murugesan[4]
[1]School of Electrical and Electronics Engineering, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India
[2]Department of Electrical and Electronics Engineering, Meenakshi Sundararajan Engineering College, Chennai, Tamil Nadu, India.
[3]Department of Electrical and Computer Engineering, Bule Hora University, Bule Hora, Ethiopia
[4]Department Electrical and Electronics Engineering, Annamacharya Institute of Technology and Science, Tirupati, Andhra Pradesh, India
Email: *jakash2109@gmail.com

Abstract. Solar radiation measurement determines how often electricity a given area absorbs from the sun. This light is the key source of energy for conversion into solar thermal and photovoltaic plants. The radiation incident is not stable and relies on the temperature records, contributing to intermittent activity and electricity supply changes. This justifies designing a method to forecast and estimate incident radiation to predict improvements in photovoltaic systems' performance. In this paper, the support vector machine (SVM) based machine learning is proposed to improve solar radiation prediction accuracy. The designed system results are compared with existing models that predicted the radiation and the global solar radiation is predicted accurately with efficient.
Keywords: Machine learning, an optimization technique, solar radiation, forecasting.

1. Introduction

An electricity user should always maintain an accurate correlation between power generation and usage. This, with traditional and manageable energy generation systems, especially with or without small interconnections, is often very difficult to manage. [2] The power grid in many countries already finds their power grid using green energy sources. This causes even more resource challenges [1]. It is not steady (solar radiation, wind, etc.). However, it is essential; particularly in cases of high energy integration that solar radiation can accurately predict effectively [3].

Different metrological patterns, seasonal fluctuations, local restrictions and intra-hr solar intensity are limited in solar systems. Figure 1 shows from January to December 2016 and monthly figures focused on the global horizontal solar radiation. Under the energy and climate lab (NREL) [4] with CMP-22 pyrometer as solar radiation sensors, Database has been modified from the Solar Radiation Test Laboratory (SRTL).

Solar radiation measurement determines how often electricity a given area absorbs from the sun[5]. This light is the key source of energy for conversion into solar thermal and photovoltaic plants. The radiation incident is not stable and relies on the temperature records, contributing to intermittent activity and electricity supply changes [7]. This justifies designing a method to forecast and estimate incident radiation, with a view to predicting improvements in photovoltaic systems' performance [9].

Sliding Mode Control and Fuzzy With MPPT Control Based PV Integrated Grid System

G MadhusudhanaRao[1*], S Jayaprakash[2], R Murugesan[3], and S Soundara Bala[4]
[1]Department of Electrical and Computer Engineering, Bule Hora University, Bule Hora, Ethiopia.
[2]School of Electrical and Electronics Engineering, Sathyabama Institute of Science and Technology, Chennai, Tamil Nadu, India.
[3]Department of Electrical and Electronics Engineering, Annamacharya Institute of Technology and Science, Rajampet, Andhra Pradesh, India
[4]Department of Electrical and Electronics Engineering, Meenakshi Sundararajan Engineering College, Chennai, Tamil Nadu, India.
Email: gmrgurrala@gmail.com[1*], jakash2109@gmail.com[2], rmurugesandr@gmail.com[3], bsoundra1977@gmail.com[4]

Abstract: In this paper, the photovoltaic (PV) system based energy generation with grid integration of inverter and DC-DC boost converter. To enhance the system transient response and track the PV voltage in the load perturbations, the sliding mode controller (SMC) is implemented. The power conversion of DC-DC is accomplished using the converter controlled using the fuzzy logic controller with the MPPT control system. The proposed system increases the grid system stability, and it is achieving the quick settling time in power converter output, which means DC link voltage improvement. The results are achieved using the MATLAB/Simulink, and the obtained results are verified successfully.
Keywords: Inverter, SMC, Fuzzy with MPPT controller, PV system, DC-DC converter.

1. Introduction

The PV systems are mostly used due to economic feasibility. The essential purpose of generating electricity from the PV array is to avoid the disadvantages of solar energy, reducing low efficiency and harmonics. Generations of pollution-free energy sources are currently one of the biggest obstacles for user-friendly system engineers and scientists [1-4]. The distribution generation (DG) - the distribution level of integrated renewable sources - is challenging because of environmental contamination and global warming. The production of electrical energy is increasing based on renewable energy sources. Normally, the system using alternate energy sources and system development is improved because the energy sources of traditional depletion focus on the greenhouse effect [5-8].

Solar energy is one of the key sources of green energy because it is free of emissions, pure, limitless and plentiful. Solar power has gained tremendous interest across the globe, and one of its key duties is to produce as much solar power as possible in varying weather conditions. In the current applications of electric power, solar photovoltaic technologies are growing aggressively due to rapid development in the relative semiconductor and power electronics industries [9-12]. The global energy system is now built on non-renewable fossil fuels, led by ever more influential global energy depletion and environmental degradation. With the highest levels of all, energy demand is rising worldwide electricity used. As a result of socio-economic prosperity, society faces a huge challenge of never-

SIMULATION AND MODELLING OF HYBRID AC/DC MICROGRID – BESS BY ANFIS-BASED FOPID CONTROLLER

[1]P.SUDHEER

[1]Assistant professor , Dept. of EEE, Annamacharya institute of technology and sciences (AITS), karakambadi, Tirupati, India

ABSTRACT— Due to large number of induction motor drives with parallel operation could increase voltage/frequency and power oscillations in hybrid AC/DC micro grids during load changes. Hybrid AC/DC micro grids employs an internal DC link and AC link incorporating Hybrid renewable resources represented by Wind turbine generator, photovoltaic arrays and energy storage system integrated with large number of induction motors with different ratings aggregated for dynamic analysis. This paper proposes an adaptive neuro-fuzzy inference system (ANFIS) based FOPID controller to damp low-frequency oscillations (LFOs) induced by IMs in hybrid AC/DC micro grids. This paper executes the comparison between proposed adaptive ANFIS based FOPID controller more unique compared to conventional POD controllers. Results indicate improved oscillatory stability performance in the hybrid AC/DC micro grid with the proposed ANFIS based FOPID controller.

Index Terms— Adaptive neuro-fuzzy inference system (ANFIS), hybrid AC/DC micro grid, induction machine (IM), low frequency oscillations (LFOs), and FOPID controller.

I. INTRODUCTION

The hybrid ac/dc micro grid (MG) has become a commonly accepted concept for higher efficiency and low cost by integrating various ac or dc distributed generators (DGs), energy storage systems (ESSs) and renewable energy sources (RESs), and to provide high reliable power supply for local loads and dynamic loads with parallel induction motors compared with pure ac or dc MGs [1]. The Power electronic converters-interfaced RESs have an excessive degree of controllability & operability compared to the synchronous generator that may increase the reliability, balance, economics, and sustainability of the energy system [2]. The hybrid AC/DC micro grid can be operated both in Islanded mode (i.e., disconnected from the distribution network) or grid-connected mode (i.e., linked to the utility grid). The manipulate of RESs in Islanded mode is a critical trouble for the development of hybrid AC/DC micro grids. One well-installed droop manage technique is employed to imitate the behaviour of synchronous generators and therefore make certain self-sustaining operation [3]. The hybrid AC/DC micro grid may also turn out to be volatile during the islanded operation mode because of unusual weather situations, faults and load adjustments continuously [4]. Small-signal stability of droop controlled islanded micro grids have been studied in [5], [7], and those research have identified frequency oscillations as a prime balance trouble in micro grids.

In the power system, a significant percentage of electricity is consumed by the IM in commercial, agricultural, and industrial applications, which represent 60% to 70% of total power [8]. Moreover, the IM is taken into consideration as a dynamic load, due to the fact their dynamics trade with the change of the system working situations (i.e., voltage & frequency). Due to the expanded use of IMs in residential, business and commercial applications, hybrid AC/DC micro grids are subjected to a wide variety of IM loading configurations. Previous studies research [9], [10] have reported that the IM significantly influence the damping of oscillations in electricity structures and a massive wide variety of IMs with exceptional ratings are aggregated for damping evaluation.

Various studies incorporating variety of control techniques investigated operation of hybrid AC/DC MGs [11] of different configurations [12]. These techniques are dedicated to the interface MG converter(s) to regulate voltage, frequency [12], coordinate load power sharing among associated resources against HRERs uncertainties and variable loading conditions with ultimate goal of improving system power quality [13]. However, the majority of these techniques are assigned considering preordained parameters which degrades

SIMULATION AND MODELLING OF GRID INTEGRATED HYBRID GREEN MICROGRID SYSTEM

[1]T.NAVEEN KUMAR

[1] Assistant professor , Dept. of EEE, Annamacharya institute of technology and sciences (AITS), karakambadi, Tirupati, India

***ABSTRACT*—**a new control strategy for an efficient multi-input transformer-coupled bidirectional dc–dc converter for power flow management in a grid-connected hybrid photovoltaic (PV)–wind-battery-based system is presented in this paper. A transformer-coupled boost half-bridge converter is used to harness power from wind, while a bidirectional buck– boost converter is used to harness power from PV along with battery charging/discharging control. A single phase NPC Inverter is used for feeding ac loads and interaction with the grid. The proposed system aims to satisfy the load demand, manage the power flow from different sources, inject the surplus power into the grid, and charge the battery from the grid as and when required. Also, the proposed converter architecture has reduced number of power conversion stages with less component count and reduced losses compared with existing grid-connected hybrid systems. This improves the efficiency and the reliability of the system. Simulation results obtained using MATLAB/Simulink show the performance of the proposed control strategy for power flow management under various modes of operation.

Index Terms— buck-boost converter, full-bridge bidirectional converter, hybrid system, MPPT, photovoltaic (PV), NPC inverter, WECS, transformer-coupled boost dual-half-bridge bidirectional converter.

I. INTRODUCTION

During recent years, the world is moving towards to the renewable energy sources due to the increase in fossil fuel prices, exhausting fossil fuel and the environmental problems caused by the use of conventional fuel sources. Among the renewable power generators, solar and wind are the most encouraging energy sources and are being increasingly used [1]. Wind power alone already provides a huge share of electricity in many areas. In the near future the electric grid will include a large number of small energy producers by the combination of renewable energy sources such as solar panels or wind generators to the grid. It is a challenge to supply stable and continuous power using these sources. This issue can be solved efficiently by integrating with energy storage elements.

To achieve the combination of multiple renewable sources, the traditional technique includes using committed single-input converters one for each source, which are associated to a common dc-bus [1]–[15]. However, these converters are not effectively utilized, due to the intermittent nature of the renewable sources. In addition, there are multiple power conversion stages which decrease the efficiency of the system.

In this paper, the sources and storage are interfaced at the dc-link through their devoted converters. Other contributions are made on their modeling characteristics and control systems for a stand-alone hybrid energy system in [9]–[15]. Dynamic performance of a stand-alone hybrid PV–wind system with battery storage is analyzed in [9]. In [14], a passivity/sliding mode control is presented which controls the operation of wind energy system to supplement the solar energy generating system. Not many attempts are made to optimize the circuit con-figuration of these systems that could reduce the cost and increase the efficiency and reliability. In [16]–[19], integrated converters for PV and wind energy systems are presented.

An integrated four-port topology dependent on hybrid PV–wind system is proposed in [18]. However, despite simple topology, the control scheme used is complex. In [19], to feed the dc loads, a low capacity multiport converter for a hybrid system is presented. Hybrid PV–wind-based generation of electricity and its interface with the power grid are the important research areas. Chen et al. [20], [21] have proposed a multi-input hybrid PV–wind power generation system which has a buck/buck– boost-fused multi-input dc–dc converter and a full-bridge dc–ac inverter. This system is mainly

SIMULATION AND MODELLING OF GRID LINKED PV-WIND HYBRID GENERATION FOR STABILITY IMPROVEMENT

[1] R.MADHAVI

[1]Assistant professor, Dept. of EEE, Annamacharya institute of technology and sciences (AITS), karakambadi, Tirupati, India

ABSTRACT— Renewable photovoltaic (PV) energy is a primary contributor to sustainable power generation in micro grids. However, PV grid-tied generators remain functional as long as the grid voltage and the input PV source remain normal. Abnormal conditions like transient grid sags or solar irradiation flickering can make the grid-tied inverter go offline. Simultaneous shut down of PV generators residing in the distribution grid may lead to an overall grid instability or outage. Therefore, PV generators must be equipped with fault ride- through mechanisms in order to remain connected and operational during faults. As an attempt to address this issue, this paper proposes a control scheme for PV inverters that improves the transient stability of a synchronous generator connected to the grid. It is shown through the paper that the proposed control scheme makes the PV inverter's dc link capacitors absorb some of the kinetic energy stored in the synchronous machine during momentary cessation. Besides that, the proposed solution is also able to improve voltage stability through the injection of reactive power.

I. INTRODUCTION

Distributed generation (DGs) using renewable energy sources (RES) has been developed in recent years [1–3]. A dispatch able small (SG) using a diesel engine or a gas engine is typically used as the main power supply in a remote micro grid where the primary grid is not available. Meanwhile, as a secondary supply, an inverter-interfaced DG using RES, e.g. photovoltaic, can be used to save fuel consumption. Therefore, for parallel opera, the control system of the inverter-interfaced DG. The provision of additional inertia, albeit virtually, is developed to enhance such a grid's dynamic response. By integrating energy storage with suitable control mechanisms for the converter, virtual inertia can be formed in DG. By controlling the output of the converter, the action of a traditional SG is emulated. In this definition, when there are changes in the operating conditions or when disruptions occur in the power grid, the DG can be handled by the converter to exhibit responses close to that of a real synchronous machine [4-6].

Given the significance of making the PV plant have a positive impact on the machine stability even as working in the MC mode, this paper proposes an FRT manage scheme based totally at the absorption of the kinetic energy saved within the SM's rotating mass to make sure brief balance. The proposed control scheme also improves voltage balance and its post fault healing thru the transport of reactive electricity into the grid. When the use of the proposed scheme, the SM lively energy output is elevated near its pre-fault cost, improving the stability between the SM electrical energy and mechanical electricity, what decelerates the rotor angular speed that, in turn, reduces the rotor attitude excursions and guarantees brief stability within the first cycles of the disturbance . The proposed manipulate scheme would not require some other additional device on the energy machine (as in [7]) or in the inverters' dc link (as in [8]). When evaluating with the answers

IMPLEMENTATION OF SOLAR PV ARRAY WITH FLEXIBLE P&O-MPPT ALGORITHM FOR CONSTANT POWER GENERATION

[1]S.PAUL CLEMENT

[1]Assistant professor, Dept. of EEE, Annamacharya institute of technology and sciences (AITS), karakambadi, Tirupati, India

ABSTRACT— Maximum Power Point Tracking MPPT technology is an important part of the design of solar PV systems to maximize the output power of PV arrays that vary with weather conditions. Although several technologies have been developed, Perturb and Observe P & O are widely used for MPPT due to their low cost and easy implementation. However, the main drawbacks of this method are low convergence time, high vibration around the maximum power point, and drift problems associated with fast illumination changes. This dissertation presents a P&O Based MPPT Techniques. However, with the continuous increase in the power of wind turbines connected to the network, the power system operators have problems, such as overload, overvoltage, and operation during network voltage disturbances. Therefore, this condition can be controlled using Constant Power Generation (CPG). The way to achieve this control is by modifying the MPPT algorithm. Constant Power Generation (CPG) uses perturb and observe (P&O-CPG) based algorithm. To evaluate this change, the existing P&O method and the changed P&O method are simulated by MATLABSIMULINK. The simulation results show that the very effective in solving the existing P&O MPTT problem.

Keywords—Photovoltaic; Modified Maximum Power Point Tracking; Constant Power Generation

I. INTRODUCTION

The renewable energy sources especially solar Photovoltaic (PV) systems have increased over the world wide. But, the generation of power using solar PV modules is always fluctuate depending on environmental conditions especially solar irradiation and environment temperature. Hence, implementation of solar PV always included with MPPT controller to reach maximum energy of solar PV and transfer it to the load [1]. Installing solar PV module to a load without applying an MPPT controller, the energy delivered from solar PV module is determined by the load resistance, so there is no guarantee to get maximum energy from the PV module [2]. According to the literature review, many MPPT methods have been developed to operate and force solar PV on maximum power point (MPP) for generating electrical energy [2-3]. All these tracking algorithms were developed aimed to get shortest tracking time or smallest steady state oscillations. Perturbation and observation (P&O) algorithms [4] is particularly popular approach because it is simple to implement [5]. However, P&O has low accuracy because operation of MPPT is oscillated around MPP.

In fact, MPPT algorithm is worked together with a DC-DC converter whose duty cycle is always changed according to MPPT algorithm to force solar PV module operated always on MPP for whatever load resistance value. But, there are the fluctuate irradiance and non-constant load, which they are has possibility of seriously failure for over voltage or over current during duty cycle adjustment. Current-voltage characteristics and output power of photovoltaic (PV) strings vary with changes of solar irradiance, temperature and aging. Accordingly, maximum power point tracking (MPPT) techniques are applied in most of applications in order to maximize the extracted power from a given PV system and increase the overall power conversion efficiency [6]. Several MPPT algorithms, varying in approach and complexity, have been introduced in the literature [7]-[15].

The focus of most of the research studies in the literature is on the extraction of maximum power from PV panels, however, there are several cases in which the control of the PV panel output active power to a certain power reference is necessary. The active power control of the PV panel is referred as constant power generation (CPG) in this study. One of these cases is the adaptation of PVPPs with new grid code regulations in which a constant power injection to the grid is requested. The grid codes aim to avoid the adverse effects of the

ENERGY MANAGEMENT SYSTEM WITH FUEL CELL/BATTERY/SUPERCAPACITOR BY USING FOPID CONTROLLER

[1]V.VENKATARAMANAMMA

[1]Assistant professor, Dept. of EEE, Annamacharya institute of technology and sciences (AITS), karakambadi, Tirupati, India

ABSTRACT— **The Hybrid Electric System (HES) is a desirable issue by integrating different, hopeful technologies like Fuel Cell, a Battery and a Super Capacitor. Because of its reliability, this system is configured for electric vehicle purposes. In this paper hybrid system performance is analyzed and evaluated by using MATLAB /Simulink. Based on a multi-input and multi-output state-space model, a model comprising a battery, a proton exchange membrane fuel cell (PEMFC), and super-capacitor were developed. A reliable energy management system for hydrogen fuel usage, and state fluctuations throughout the super-capacitor or battery were analyzed and assessed to regulate load demand and to examine supply sources. The simulation outcomes could substantially confirm overall performance using MATLAB / Simulink environment.**

Index Terms— hybrid system, Fuel cell, battery, super capacitor, power management, FOPID controller

I. INTRODUCTION

The use of more cars creates serious challenges for the environment and / human life, air pollution, global warming and the rapid reduction of fossil fuel reserves on earth are now becoming services. Electric vehicles, hybrid electric vehicles and fuel cell electric vehicles have been continuously designed to change traditional cars in the coming days. Most hybrid and electrical electrical structures use multiple energy storage projects, one with high level energy storage capacity and the other with high energy capacity and reversibility, called "rechargeable energy storage system". It provides long range and offers great acceleration and regenerative braking. Energy storage or power supply strategies differ in their output voltage based on load or state of charge (SoC) and the high voltage of the DC bus connection creates significant challenges for vehicle engineers when the power is on. Integrated or storage equipment with DC-DC traction converters. Limit the elements in the power plant by increasing or cutting the voltage levels. Due to the limitations of the locomotive, the power converters must be lighter, more reliable, of lower volume, higher productivity, less electromagnetic interference and less ripples of voltage and current [1] [2-8]. An electric vehicle uses a combination of three different energy storage devices, such as fuel cells (FC), batteries and supercapacitors (SC) to power an electrical drive scheme. In electric vehicles, one or more energy storage devices help the main energy source [9-14]. Therefore, the system cost, mass and volume can be reduced and a substantially improved yield can be obtained. Two frequently used energy storage tools are batteries and SC [15]. They can be connected to the Ffuel Cell stack in many approaches. A simple design consists of directly connecting two devices in parallel (FC / battery, FC / SC or battery / SC). The impedance of the system will depend on several factors such as soc, health, temperature and at the point of operation. Each project could work in an incompatible condition, such as efficiency and health [12-16]. The voltage characteristics of both devices must be completely balanced and for example only a small part of the device's working range. In the configuration of the fuel cell battery n, the fuel cell must almost always supply the same power due to the fixed voltage of the battery and the battery / Super capacitor .The super capacitor design can only use a portion of the super capacitor's energy exchange capacity. This is again due to the almost constant electricity of the battery. After designing the DC / DC converters, we can determine the voltage deviations of the devices and control the power of each device. In general, the hybrid / FC / SC battery performs better than

SIMULATION AND MODELLING OF DUAL-T-TYPE CASCADED MULTILEVEL INVERTER WITH REDUCED COMPONENTS

[1] B.ESWAR KUMAR

[1]Assistant professor, Dept. of EEE, Annamacharya institute of technology and sciences (AITS), karakambadi, Tirupati, India

***ABSTRACT— This* paper introduces a new Dual –-T-Type cascaded multilevel inverter with reduced components. The Dual –-T-Type CHB inverter is having more importance in power electronics application due to reduction in switching losses to other type of inverter. This inverter is adopted with level shifted carrier PWM (LSCPWM) technique. This MLI addresses two major drawbacks associated with the conventional and other recently proposed MLIs which are the high voltage stress of switches and higher power component counts. The proposed DTT-5L-CMI is capable of five levels generation with double voltage boosting gain. Overall this design can be modelled in MATLAB/Simulink software.**

Index Terms— Cascaded multilevel inverter, dual-T-type topology, soft charging, switched-capacitor, voltage boosting.

I. INTRODUCTION

Multilevel inverters (MLIs) had been developed as one of the most cost-effective power electronic devices having an extensive variety of applications. These devices had been a center of consciousness for researchers currently seeing that they own various interesting features. These capabilities consist of excessive excellent output voltage, better performance, and small voltage strain on switches. MLIs have contributed notably within the area of electricity device with the aid of their huge range of applications [1–4]. They can be included with photovoltaic (PV) grid systems, can be carried out in wind farms and excessive voltage direct present day (HVDC) systems. MLIs are designed using unique association of electricity electric powered gadgets along with integrated gate bipolar transistor (IGBT) switches and DC substances to generate high voltage outputs. MLIs are traditionally categorized into three fundamental classes [5]: Neutral Point Clamped (NPC), Flying Capacitor (FC) and Cascaded H-bridge (CHB). NPC inverter become first introduced in 1981 and it was a three-degree inverter [6]. FC inverter become first proposed in 1992 and it changed into constructed using independent capacitors [7]. The essential idea of developing CHB inverters with several DC supplies turned into first proposed in 1998 [8]. The blessings and disadvantages of MLIs rely upon numerous elements. These factors consist of: wide variety of switches, DC elements, diodes, capacitors and voltage degrees, alongside fine of voltage, maximum voltage, switching stress, switching frequency, and total voltage stress (TVS). The classical MLI topologies have a few key obstacles based on these factors. Some commonplace boundaries of NPC MLI can be listed as follows: loss of modularity, necessity of high amount of clamping diodes, unequal electricity distribution, choppy usage of switches and unbalanced voltages. The key obstacles in FC MLIs are balancing the fees of capacitors at low switching frequency and requirement of too many clamping capacitors. Similarly, CHB MLIs have positive barriers which includes requirement of remote DC-deliver for every H-bridge module which could increase the general price of these topologies substantially [9]. These obstacles have advocated

Journal of Alloys and Compounds 861 (2021) 158582

Contents lists available at ScienceDirect

Journal of Alloys and Compounds

journal homepage: www.elsevier.com/locate/jalcom

An experimental investigation and optimization of energy consumption and surface defects in wire cut electric discharge machining

M. Chaitanya Reddy, K. Venkata Rao*, Gamini Suresh

Department of Mechanical Engineering, Vignan's Foundation for Science, Technology and Research, Vadlamudi, Guntur, Andhra Pradesh 522213, India

ARTICLE INFO

Article history:
Received 7 December 2020
Received in revised form 26 December 2020
Accepted 29 December 2020
Available online 7 January 2021

Keywords:
WEDM
Deionized water
MMC
Optimization techniques
Energy consumption

ABSTRACT

Optimizing the energy consumption and minimization of surface defects in wire cut electric discharge machining (WEDM) at the experimental design effectively saves energy and improves quality of machining. The present study is aimed to reduce energy consumption and improve machine performance related to kerf width, metal removal rate and surface quality in WEDM of Al-Si metal matrix composite. Current, pulse on time, pulse off time, voltage and wire tension are considered as controllable parameters and optimized using graph theory and utility concept (GTUC) and teaching learning based optimization (TLBO) algorithm considering criteria for the performance characteristics. It is observed that 26% of the additional energy is consumed in GTUC method while 40% less energy is consumed in TLBO method; the kerf width is found to be 8.4% more in GTUC and 2.8% less in TLBO respectively; the MRR is found to be 40.2% and 43.2% less in GTUC and TLBO methods respectively; 72.8% of the excess surface roughness is found in GTUC method while 1.2% less surface roughness is found in TLBO method. Effect of process parameters on the performance characteristics is also analyzed and the current is found to be dominant parameter. At TLBO optimized working condition, surface defects around kerf are found minimum.

1. Introduction

Wire cut electric discharge machining (WEDM) is a spark erosion process makes complex shapes on electrically conductive materials. The work piece immersed or flushed with dielectric medium and spark generated between workpiece and wire electrodes to cut the material. The WEDM is the popular machining processes among all unconventional machining processes for difficult-to-machine materials (like tungsten carbide, graphite, molybdenum, tool steel, titanium, aluminum alloy, Inconel 718 and metal matrix composites), which are widely used in manufacturing industries like aeronautics, nuclear reactors, automobiles. Aluminum-Silicon (Al-Si) is a metal Matrix composite (MMC) used in these applications due to its high strength, high stiffness, high thermal stability, good wear resistance, good electrical conductivity, low density etc. Therefore, the current trend in research focusing on aluminum based MMC is due to the wide range of applications in different areas. Since, the WEDM has a better ability in the complex cutting of MMCs over conventional cutting methods, researchers have been investigating effect of Pulse duration, spark gap voltage and discharge current, wire tension, dielectric fluids on surface roughness, kerf width and material removal rate (MRR) and surface defects for different MMCs.

Optimization of power consumption in manufacturing is still a challenge for manufacturers to achieve sustainability in WEDM. Researchers are developing various methods of adapting to sustainability and 70% of current studies have addressed machining characteristics namely kerf width, surface roughness and remaining studies addressed the sustainability in manufacturing. Currently, developing countries, such as India, Brazil, South Africa and others, are focusing on sustainability in manufacturing to minimize adverse effects on the environment. Malek and Desai [1] stated that sustainable manufacturing is a thriving area that balances product quality and economic and environmental factors. Majumder and Maity [2] optimized the current, pulse on time, wire tension, wire feed speed and flushing pressure using general regression neural network technique and minimized energy consumption in WEDM of nickel-titanium alloy. Gamage et al. [3] detected power consumption during non-matching operations and reduced power by 2/3 in the WEDM of Ti-6Al-4V and Inconel 718 through optimization of process parameters. Zheng et al. [4] developed a minimum energy consumption control strategy and reduced processing time and energy consumption by 21.94% and 28.23% respectively. In another study, Ming et al. [5] introduced magnetic field in EDM and optimized

* Corresponding author.
E-mail addresses: malla.chaitanyareddy@gmail.com (M.C. Reddy), kvenkatrama@gmail.com (K. Venkata Rao), gaminigsuresh@gmail.com (G. Suresh).

https://doi.org/10.1016/j.jallcom.2020.158582
0925-8388/

JOURNAL OF RESOURCE MANAGEMENT AND TECHNOLOGY

ISSN NO: 0745-6999

EFFECTS OF POST WELD TREATMENT ON MICROSTRUCTURE AND MECHANICAL BEHAVIOR OF FRICTION STIR WELDED THICK SELECTION AL-CU ALLOY

M. Uma Maheswari[1],S.Siva Sankar[2], M.Balaji[3]

1. M.tech Student,(Production Engineering)

2. Asst. professor, Department of Mechanical Engineering

3. HOD, department of Mechanical Engineering

1,2,3-ANNAMACHARYA INSTITUTE OF TECHNOLOGY& SCIENCES, TIRUPATI, CHITTOR-517520, ANDHRA PRADESH, INDIA

ABSTRACT:

In this project, the effect on microstructure, dynamics of friction stir was analyzed of welding parameters, tool designs, and the soldering of AL6061 and Cu plates. With ANSYS tools, the finite element analysis is carried out for the Friction stir welding of two identical surfaces. This research comprises the thermal and mechanical welding simulation model of a finite element. Which requires moving heat supply, material deposition, material characteristics depending on temperature, metal plasticity, and elasticity, transitional heat transfer, and mechanical analysis. The welding simulation was known as a thermo-mechanical series-coupled analysis and for the filler metal deposition simulation, the element birth and death technique were used. The fastest developing joint equipment and the most important perspective technique for the application of the integrated fuselage structure in aircraft construction is friction stir welding (FSW). FS solder feasibility depends on mechanical characteristics as well as output turns, depending upon the rate of welding and the configuration of the tool. The static properties, the failure positions, and the minimum and maximum rest stress is determined by the micro structuring and microhardness affected by the welding speeds. The research examines the nature and distribution of material movement, grain structure as well as its effect on mechanical properties of aluminum FS welds.

Key words: Friction stir welding (FSW), joint, plate, stress analysis, Dissimilar materials.

1.0 INTRODUCTION

Friction stir is a stable joining technology that was developed by the United Kingdom's Welding Institute (TWI) in 1991. Despite being initially intended for alloys, it was soon extended to many other metals and materials, particularly to hard-to-sweat metals, using the given fusion softening techniques. This is a solid-state welding method in which the relative movement between workpiece and instrument creates heat that lets a plastic atomic diffusion link the material from two ends. This technique (FSW) uses mechanical energy to be directly transformed to thermal energy to produce the solder without requiring heat from external sources. The key variables which should be regulated to ensure the required combination of heat and pressure to shape the weld are the rotational speed, solder speed, axial pressure and tool profile. These settings are modified so that the communication interface of metals is heated into the plastic (plastic status) temperature range where solving can occur.

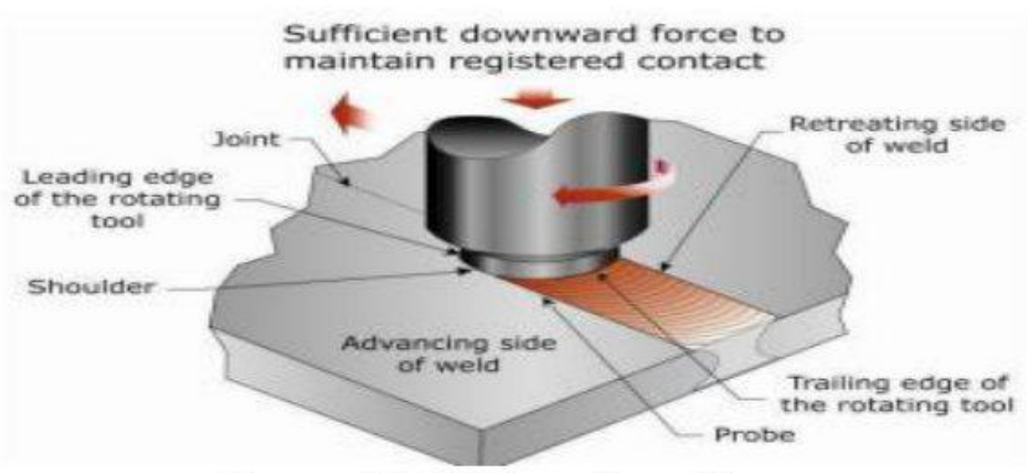


Figure: 1.1 Friction stir welding

Friction Stir Welding (FSW) Principle:

Friction stir welding relies on the same friction welding principle. Friction is then used to produce heat on the surface of the interface. This heat begins diffusion on the surface of the pairing. A high-pressure strength on these surfaces accelerates the mechanism of metal diffusion and forms a metal-to-metal joint. The theory of friction welding is fundamental. A revolving tool pin on the interface is now inserted into work parts until it is touched by the tool

IOP Publishing Surf. Topogr.: Metrol. Prop. 9 (2021) 035019 https://doi.org/10.1088/2051-672X/ac1915

Surface Topography: Metrology and Properties

RECEIVED
8 April 2021

REVISED
8 July 2021

ACCEPTED FOR PUBLICATION
29 July 2021

PUBLISHED
12 August 2021

PAPER

A comparative study on the mechanical and tribological characteristics of AA7075/h-BN and AA7075/h-BN/MoS_2 hybrid nano-composites produced using stir-squeeze casting process

Sudheer Reddy Beyanagari and Jayakrishna Kandasamy*

School of Mechanical Engineering, Vellore Institute of Technology University, Vellore, Tamil Nadu—632014, India
* Author to whom any correspondence should be addressed.

E-mail: sudheerb121@gmail.com **and** mail2jaikrish@gmail.com

Keywords: hybrid metal matrix composites, aluminum alloy, hexagonal-boron nitride, molybdenum disulfide, squeeze casting, mechanical properties, tribological properties

Abstract

AA7075 is used in several automobile applications due to its low density and better mechanical properties. However, the friction and wear properties of AA7075 are not up to the mark to extend its application for tribological applications. Hence, this present study focuses on improving the mechanical and wear properties of AA7075 through different reinforcements like h-BN and MoS_2 nanoparticles. Two different composites namely AA7075/h-BN and hybrid AA7075/h-BN/MoS_2 are produced using a stir-squeeze casting process by varying weight percentages of h-BN and MoS_2 particles and their mechanical and tribological characteristics are compared. Physical characterization like morphology, phase structure, density, and porosity values are determined. The reinforcement of MoS_2 and h-BN particles has modified the microstructure in terms of dendrite formation. Hardness is measured and correlated with the tensile strength of the developed composites. Maximum ultimate tensile strength (UTS) of 361.5 MPa is obtained for AA7075/h-BN composite as compared to hybrid AA7075/h-BN/MoS_2 and AA7075. A higher hardness of 164.39 HV is attained for AA7075/1.0h-BN/0.5MoS_2 composite as compared to AA7075/h-BN composites and AA7075. Tribological characterization is studied using the pin-on-disc apparatus at an applied load of 40 N, a sliding distance of 1000 m, and a sliding velocity of 2 m s^{-1}. Higher delamination and adhesion wear exhibited by AA7075 is controlled with the reinforcements of h-BN and MoS_2 nanoparticles. Comparatively, the hybrid AA7075/h-BN/MoS_2 has shown better tribology behavior than the other composites. Additionally, the various wear mechanisms of AA7075/h-BN and hybrid AA7075/h-BN/MoS_2 composites during the sliding are studied.

1. Introduction

Aluminium (Al) is an inevitable engineering material used in numerous industries, such as aerospace, automotive, marine, and so on due to its low cost, low density with high strength, decent cast-ability, high thermal conductivity, and machinability [1, 2]. However, the poor wear resistance and low surface hardness limit the use of Al alloys for tribological applications [3]. Considering the density factors of Aluminium alloy (AA) in automobile and aerospace applications [4–8], several researchers have used additives like oxides (Al_2O_3, $CaCo_3$, TiO_2, ZnO, Cr_2O_3, Si_3NO_4, etc), carbides (SiC, TiC, WC, B_4C, etc) and nitrides (TiN, CrN, ZrN, h-BN, etc) as reinforcement materials to improve the mechanical and tribological properties of Aluminium alloy [9–13].

There are two fabrication methods like liquid state method (stir casting, stir-squeeze, compo casting, etc) and the solid-state method (powder metallurgy, friction-stir processing, diffusion bonding, etc) for the production of Aluminium alloy and its composites [5, 14–19]. Among these, liquid state methods are beneficial in terms of low cost, ease of production, property achievement, and effective stirring of matrix and reinforcement, which is more desirable to the materials as well as for the production industries. Stir-squeeze casting is one of the effective liquid state methods,

RESEARCH ARTICLE OPEN ACCESS

Experimental Study of Liquid Quench Media Cooling Performance by the Effect of Heat Transfer characteristics

M. Maruthi Rao*, N. Santhi Sree**, S. Praveena[1], S. Nishanthi[2], S. Lakshmi[3]

*(Research Scholar, Dept.; of Mechanical Engineering, ANU, Guntur, AP, India.

(Email: raom06838@gmail.com)

** (Dept. of Mechanical Engineering, Associate Professor, Osmania University, Matrusri Engineering College, Hyd, AP, India.

1. Assistant Professor, Dept. of Mechanical Engineering, JNTUA AITS, Tirupati, AP, India.
2. Assistant Professor, Dept. of Mechanical Engineering, JNTUA AITS, Tirupati, AP, India
3. Assistant Professor, Dept. of Mechanical Engineering, JNTUA AITS, Tirupati, AP, India

----------**********----------

Abstract:

Heat transfer characteristics of quench media decide the mechanical properties of metals, alloy and micro structure. As the hot metal is immersed in the cooling medium, the liquid vaporizes instantly and the thin film produced decreases the heat transfer rate of the metal. Novel quench media cow urine as quench ant for heat treatment process, in these media different additives and enzymes are present homogeneously and destabilize the thin film and effective heat transfer rate occurred. In addition time and temperature have improved the mechanical properties of the Al2585 alloy. In this experimental work was observed that quench media, time and temperature play vital role increase properties of the Al 2585 alloy. Based on heat transfer characteristics of different media (Tap water, Distilled water, Soap nut solution, Shikakai nut solution, Engine oil) gives maximum mechanical properties cow urine and minimum is Engine oil.

Keywords — **Al alloy, Heat transfer characteristics, Mechanical properties, Quench media.**

----------**********----------

I. INTRODUCTION

Heat transfer characteristics like (Thermal conductivity, heat transfer coefficient, specific heat, thermal diffusivity etc.,) play vital role decide the mechanical properties of the metal and alloy. If the micro structure is strong mechanical properties are also strong. In literature survey different cooling medium used for heat treatment process, for improving the micro structure and properties. Sound micro structure sound mechanical properties defects in micro structure, mechanical properties not significant level. Addition of Nacl [1] not a significant effect of thermal conductivity and viscosity of water, the addition of PVP polymer effect on the viscosity of water. Mineral oils decrease conductivity and increase viscosity compared with water. In this experimental study showed that kinematic viscosity main factor affects the quench severity. Vegetable oils [2] rate of heat transfer hardness and severity of quench both edibles and non-edible oils. Based on heat transfer characteristics decide the best cooling media. Phase transformation [3] of Cu-Al-Mn alloy was performed using optimized thermodynamic parameters from literature. Precipitation behaviours in [4] Al-Cu-Mg and 2024 aluminium alloy in this study by means of conductivity and hardness measured calorimetry and TEM. Heat transfer characteristics [5] of each boiling regimes can be approximately by LFP, MHF and CHF plus properties of quench ant, finally CFD software, to simulate the quenching process compare the results with thermocouple readings. When hot metal [6] quenched in cooling media, boiling of quench ant goes through different stages each stage has

Surface Review and Letters, Vol. 28, No. 11 (2021) 2150106 (13 pages)

DOI: 10.1142/S0218625X21501067

World Scientific
www.worldscientific.com

INVESTIGATION ON DRY SLIDING WEAR BEHAVIOR OF TITANIUM DIOXIDE-REINFORCED MAGNESIUM MATRIX COMPOSITE

P. C. ELUMALAI* and R. GANESH†,‡
*Faculty of Mechanical Engineering,
Centre for Research, Anna University,
Chennai, Tamil Nadu, India

†Mechanical and Industrial Section,
University of Technology and Applied Sciences,
Nizwa, Sultanate of Oman
‡ganeshrk1982@gmail.com

Received 19 October 2020
Revised 4 July 2021
Accepted 12 July 2021
Published 20 August 2021

In this work, the dry sliding wear behaviors of pure monolithic magnesium and magnesium–titanium dioxide (Mg–TiO_2) composites were studied using pin-on-disc tribometer against an oil-hardened nonshrinking die steel (OHNS) counter-disc with a normal load of 0.5–2 kg and a sliding velocity of 1.5–2.5 $m \cdot s^{-1}$ with the sliding distance and wear track diameter of 1500 m and 90 mm, respectively. The pin samples were characterized for their microstructural, nanomechanical and tribological properties such as wear rate, coefficient of friction and wear fractographs. Scanning electron microscopy (SEM) was used to analyze the worn-out surfaces of each pin sample in order to identify the different types of wear and wear mechanisms and the chemical constituents of each element were quantified by energy-dispersive spectroscopy. The influence of TiO_2 reinforcements on the nanomechanical behavior was studied by nanoindentation technique. As compared with pure Mg, the nanoindentation strengths of Mg–1.5TiO_2, Mg–2.5TiO_2 and Mg–5TiO_2 composites were found to increase by 11.9%, 22.2% and 35.8%, respectively, which was due to the addition of TiO_2 particles and also due to the good bonding at the interface of TiO_2 and magnesium particles. From the wear test results, a significant change in wear rate was observed with the change in normal load than that of sliding speed, whereas a significant change in coefficient of friction was noticed with the changes in both normal load and sliding velocity. The dominant wear mechanisms involved under the testing conditions were identified through plotting the contour maps and SEM fractographs. Also, from the fractographs it was noticed that delamination and plowing effect have been the significant wear mechanisms observed during low wear rate of samples, whereas melting, delamination and oxidation wear have been observed during high wear rate of pure Mg and its composites.

Keywords: Magnesium; fractographs; nanoindentation; delamination; wear mechanism.

‡Corresponding author.

Security Vulnerabilities Affecting on Addititve Manufacturing Systems in the Era of Industry 4.0: An Extensive Review

S. Rambabu[a], N. Thirupathi Rao[b], M. Ramakotaiah[c], J. Simhadri Raju[d] and J. Venumurali[e]

[a]Department of Mechanical Engineering, Vignan's Institute of Information technology, Visakhapatnam
[b]Department of Computer Science and Engineering, Vignan's Institute of Information technology, Visakhapatnam
[c]Department of Mechanical Engineering, Narasaraopeta Engineering college, Narasaraopeta
[d]Department of Mechanical Engineering, GITAM Institute of technology, Visakhapatnam
[e]Department of Mechanical Engineering, Sri Venkateswara University College of Engineering, Tirupati
Email: ramu.sarimalla@gmail.com

2021 Emerging Trends in Industry 4.0 (ETI 4.0) | 978-1-6654-2237-6/21/$31.00 ©2021 IEEE | DOI: 10.1109/ETI4.051663.2021.9619291

Abstract :- **The Industry 4.0 concept refers to the integration of the smart manufacturing systems with the developed information technologies such as machine learning, internet of things (IoT), big data, augmented reality, additive manufacturing/3D printing, and cyber security technologies. This paper presents the potential vulnerabilities and their affects on the additive manufacturing systems at various stages including design phase, manufacturing phase, post-processing and testing phase. It was found that the malicious modification of 3D CAD file, .STL file, toolpath or G-code file affects on the quality and functional performance of the additive manufactured parts by means of introducing the internal voids, modify the external surface geometry, or alter the printer firmware to change the laser power intensity, scanning strategy, and layer thickness. Furthermore, the side-channel leakage of information from the vibration, acoustic, thermal, magnetic and power emissions data could be used to reconstruct the original product design and manufacturing conditions. Finally, the paper concludes the importance of cybersecurity of additive manufacturing systems in order to achieve the desired quality and productivity.**

Keywords— Industry 4.0, Additive Manufacturing, 3D Printing, Vulnerabilities, Cybersecurity.

I. INTRODUCTION

Additive manufacturing (AM), also called as the 3D printing, refers to the creation of three dimensional objects by means of joining the material together in layer-by-layer fashion, based on the 3D computer aided design (CAD) data, in order to get the required shape and size of the parts. Compared to the subtractive manufacturing, which employ various cutting tools to remove the excess material from the initial raw material in order to get the required shape and size of the parts, AM has several advantages such as shorter design to production time, reduced wastage of raw material, ability to produce functional parts with complex geometries, customised design of the required parts and reduced logistics. The AM process chain involves three major stages such as design phase, manufacturing phase, and post-processing and testing phase. The unique capabilities of additive manufacturing technology allow fabrication of parts with complex geometries and functionalities required for automotive, aerospace and medical applications. However, due to increasing the computerisation and information technologies in Industry 4.0, the quality and performance of the additive manufacturing parts can be compromised by means of maliciously modify the controller PC, .STL file of the 3D object geometry, G-codes, and printer firmware [1],[2],[3].

In the era of Industry 4.0, there is an increasing interest in cybersecurity of additive manufacturing systems from several researchers and industries. The additive manufactured part quality, performance and intellectual property rights can be compromised by means of placing the internal voids into the original design file, malicious modification of .STL file, alter the toolpath file commonly G-code commands dynamically during printing process. Belikovetsky et al., [2] demonstrated the malicious modification of a blueprint of the propeller for quadcopter unmanned aerial vehicle (UAV), thus leads to the manufacture of a sabotaged propeller blade which resulted in physical destruction of a quadcopter during midflight. Sturm et al., [1] demonstrated the malicious modification of the external geometry of a 3D object by means of alter the .STL file of the original design and that affect on the strength of the 3D printed parts. The intellectual property violation arises by means of reconstructing the product design and manufacturing conditions using the side-channel leakage of acoustic, thermal, or vibration data [4]. Furthermore, the malicious attack on the printer firmware can sabotage the system by means of running the malicious code in order to modify the control signals given to the printer actuators such as print head motors, extruder head, laser power, or to deny the printer services [5]. Zeltmann et al., [6] investigated the affect of contaminated feed material and orientation of printing on the tensile strength of the printed parts. They observed that the malicious modification of main material with the contaminated material, and changing the original

International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 06 Issue: 07 | July - 2022 Impact Factor: 7.185 ISSN: 2582-3930

TAGUCHI: FACTORS INFLUENCING NO_X EMISSIONS FROM A DIESEL ENGINE FUELLED WITH CRUDE RICE BRAN OIL METHYL ESTER BLEND

M Maruthi Rao[1], N. Santhi Sree[2], S. Praveena[3]

[1]Research Scholar, Dept; of Mechanical Engineering, ANU, Guntur, AP, India.
[2]Associate Professor, Dept of Mechanical Engineering, Matrusri Engineering College, Osmania University, Hyderabad, Telangana, India.
[3]Assiatant Professor, Dept; of Mechanical Engineering, AITS, JNTUA, Tirupati, AP, India.

Abstract - The major goal of this research is to reduce smoke density and brake thermal efficiency without sacrificing NOX emissions from a stationary diesel engine running on a crude rice bran oil methyl ester blend. The research will also look into the elements that may be affecting the goal. NOX emission, smoke density, and BTE are taken into consideration as the objective's promising elements, while fuel injection timing, percentage of exhaust gas recirculation, and fuel injection pressure are chosen as the response variables. The most effective combination of the factor levels in achieving the objective was found, and the same was confirmed experimentally. Tests were carried out in accordance with the L9 orthogonal array, the most influencing factor for each response variable, as well as the graphs also drawn for each response variable.

***Key Words*:** Crude rice bran oil, NOx emissions, Diesel engine, Transesterification, Taguchi method.

1.INTRODUCTION

In order to fulfil the rising demand for petroleum diesel, biodiesel, a promising sustainable energy source made from vegetable oils, has received greater attention over the past two decades. Along with other benefits, the engine's NOx emission when powered by biodiesel was relatively greater than that of diesel, which hinders the marketability of the product. For engines running on biodiesel, NOX reduction techniques such as water injection, exhaust gas recirculation (EGR), and combustion modification through delayed injection timing were also tried. If the emission criteria cannot be fulfilled by changing the combustion process alone, the later technique can be taken into consideration. NOx reduction by change of the combustion process is the most economical method when compared to treatment of exhaust gases with the use of various. Researchers found that increasing smoke density and decreasing brake thermal efficiency occur in conjunction with a reduction in NOx emissions from diesel and biodiesel when fuel injection and EGR are delayed (BTE). Researchers found that for a three crank angle degree (CAD) delay, biodiesel's NOx emission greatly decreased while its smoke emission dramatically increased. Tsolakisa achieved a 16 percent reduction in NOx with a 20 percent rise in smoke emission at the same retardation angle while using rapeseed methyl ester. It has been demonstrated that cooled EGR is a highly effective NOx reduction approach that lowers the peak flame temperature and oxygen partial pressure in the first part of the flame and lowers NOx generation. Research on biodiesel with 15 percent EGR produced a 74 percent reduction in NOx with a 20 percent rise in smoke. Additionally, it was stated that raising the EGR by more than 15% would increase fuel consumption and smoke emissions. In order to decrease NOx emissions without raising smoke emissions or fuel consumption, fuel injection timing and EGR percentage must be optimized. Additionally, it was implied that the fuel injection time and EGR should be researched in order to determine which has the greatest impact on NOx control. In this study, fuel injection timing and EGR percentage are both changed at the same time to examine the impact on NOx control of a stationary diesel engine running on a biodiesel blend. Because fuel injection pressure also two affects IC engine combustion, it fluctuated along with injection time and EGR %.**1.1** layout.

2. Alternative fuels:

Vegetable oil, biodiesel, Fischer-Tropsch (F-T) diesel, and dimethyl ether are the four alternative fuels that can be used in conventional compression ignition engines (CIE) quite easily (DME). You can utilise vegetable oils as an alternative fuel for diesel engines, including olive, palm, soybean, sunflower, and peanut oils. Natural gas may be used to make F-T and DME, therefore the availability of feedstock is not a constraint. Catalyst composition has a significant impact on Fischer-Tropsch product composition: product from iron catalyst higher in olefins and oxygenates and product from cobalt catalyst higher in paraffin's. Biodiesel, often known as vegetable oil (m) ethyl esters, is a leading contender for alternative diesel fuels. Technically speaking, biodiesel is comparable to and superior to traditional petroleum diesel fuel. The viscosities of the vegetable oils used as alternative engine fuels range from 10 to 20 times higher than that of petroleum diesel fuel. The transesterification procedure is used to reduce the oil's viscosity. The term "bio-diesel" describes a diesel fuel made from animal or vegetable fats that contains long chains of alkyl esters (methyl, ethyl, or propyl). Vegetable oil, soybean oil, or animal fat are chemically combined with an alcohol created

Tribological Investigation of Epoxy Composite with Hard Powder

K.Rajasekhar[1*], S.SivaSankar[2*], C.Jaysham[3*] and K.Satishkumar [4*]

[1,2,3,4]Department of Mechanical Engineering, Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh, India.

Abstract: The development of high performance materials based on epoxy resin finds a growing number of applications in which high wear resistance is required. One major drawback in many of these applications is the relatively poor wear resistance of the epoxy resin. Therefore, in order to investigate on the possibility of increasing wear resistance of thermo set polymers filled with hard powders, sliding tests are carried out by means of a pin on disc apparatus. In particular, composite resins, constituted by an epoxy resin filled with different contents and sizes of Silicon Carbide powder, are analyzed; the wear resistance, in terms of volume loss, is measured for different abrasive counterfaces and loads.

DOI of the Article: https://doi.org/10.46501/IJMTST0707007

Available online at: http://www.ijmtst.com/vol7issue07.html

As per UGC guidelines an electronic bar code is provided to seure your paper

To Cite this Article: K.Rajasekhar; S.SivaSankar; C.Jaysham and K.Satishkumar. Tribological Investigation of Epoxy Composite with Hard Powder. *International Journal for Modern Trends in Science and Technology* 2021, *7*, 0707015, pp. 40-44. https://doi.org/10.46501/IJMTST0707007

Article Info. Received: 14 May 2021; Accepted: 2 July 2021; Published: 7 July 2021

IOP Publishing Surf. Topogr.: Metrol. Prop. 9 (2021) 045009 https://doi.org/10.1088/2051-672X/ac2795

Surface Topography: Metrology and Properties

RECEIVED
27 July 2021

REVISED
7 September 2021

ACCEPTED FOR PUBLICATION
16 September 2021

PUBLISHED
8 October 2021

PAPER

Tribological performance evaluation of h-BN nanoparticle reinforced AA 7075 and as-cast AA7075 using Taguchi and genetic algorithm

Sudheer Reddy Beyanagari and Jayakrishna Kandasamy*

School of Mechanical Engineering, Vellore Institute of Technology University, Vellore, Tamil Nadu–632014, India

* Author to whom any correspondence should be addressed.

E-mail: sudheerb121@gmail.com **and** mail2jaikrish@gmail.com

Keywords: AA7075, h-BN nanoparticles, stir-squeeze casting, friction, wear, taguchi method, genetic algorithm

Abstract

In addition to the properties of reinforcement, the tribological parameters (temperature, applied load, and sliding distance) play a vital role in determining the tribological characteristics of the composites. Though there are studies related to the AA7075/h-BN composites, the influence of tribological parameters on the friction and wear characteristics is not addressed. In this regard, a solemn attempt has been made in this research work to study the role of tribological parameters on the tribological characteristics of AA7075/h-BN composites. Taguchi method and genetic algorithm are employed to predict the impact of tribological parameters on the wear resistance of AA7075 and AA7075/h-BN composites. The formulation of genetic algorithm models along with regression analysis is used for estimating the effect of each input parameter on the tribological behaviour of the AA7075 MMCs. The microstructure of AA7075/h-BN composite is analysed and found that the formation of rosette-like dendrites with increased mechanical and tribological properties. The optimum wear rate and Co-efficient of Friction (CoF) values of AA 7075/h-BN composite is obtained with input process parameters at a temperature of 30 °C, applied load 10 N, and sliding distance of 1000 m respectively. The further results show that the temperature and load play a vital role in the specific wear rate and coefficient of friction of AA7075 MMCs, leading to improved tribological performance characteristics. In addition, various wear mechanisms are briefly discussed in this study.

Abbreviations and Nomenclature

Al	Aluminum
AA	Aluminum Alloy
CoF	Co-efficient of Friction
CTE	Co-efficient of Thermal Expansion
DOE	Design of Experiments
EDM	Electric Discharge Machine
FE-SEM	Field Emission-Scanning Electron Microscope
GA	Genetic Algorithm
h-BN	hexagonal Boron Nitride
L	Applied Load
MMCs	Metal Matrix Composites
OM	Optical Microscope
SC	Squeeze Casting
SD	Sliding Distance
SEM	Scanning Electron Microscope
S/N Ratios	Signal—to—Noise Ratio
SSC	Stir-Squeeze Casting
SWR	Specific Wear Rate
T	Temperature
UTS	Ultimate Tensile Strength
WR	Wear Rate
XRD	X-ray Diffraction
ρe	experimental density
ρt	theoretical density
ρm	density of the matrix
ρr	density of the reinforcement

Applied Nanoscience
https://doi.org/10.1007/s13204-021-02333-1

ORIGINAL ARTICLE

Data mining and deep learning-based hybrid health care application

Chandrakala Kuruba[1] · N. Pushpalatha[2] · Gandikota Ramu[3] · I. Suneetha[2] · M. Rudra Kumar[4] · P. Harish[2]

Received: 7 November 2021 / Accepted: 19 December 2021

Abstract
The healthcare industry is rapidly changing all across the world. The healthcare industry generates a large volume of diverse data. It is critical for the healthcare industry to effectively get, collect, and mine data. As a result, data mining is used to process vast volumes information on patients, diagnosis, and treatments. Data mining helps physicians to analyze the causes, symptoms, and therapies to discover particular therapy side effects, allowing them to make better judgments and decrease treatment risks. In this paper, we mentioned important problems in healthcare today and also specified different data mining applications in healthcare and reviewed various research works on healthcare applications. Aim of this work is to build a more suitable data mining and deep learning-based hybrid architecture for early detection of breast cancer.

Keywords Healthcare · Problems · Data mining · Applications · Swarm intelligence · PSO · Machine learning · Survey · Deep learning

Introduction

The cure of injury, illness, disease, prevention, treatment, diagnosis, recovery and individuals with mental and physical impairments were the focus of health care. Experts in medical and related health fields provide health care.

The following are the most important problems in healthcare today:

- Security/privacy: being aware of cybersecurity risks to healthcare data privacy and customer to boost customer trust in data sharing. Keeping up with state and federal privacy rules as they change.
- Policy on health care: handling with current healthcare policy regulations, political unpredictability/antagonism, modification/replace/repeal, and a lack of a well-defined regulatory procedure.
- Points of care that is easily accessible: acceptance of micro-hospitals, home-based care, retail clinics, and digital gadgets, wearables, mHealth, telehealth and other attempts that bring treatment closer to office and home.
- Future payment models: as the focus shifts from volume to value, build and integrate technology and operational infrastructure and programs for a more collaborative and equitable approach for risk sharing, cost control, and enhanced quality outcomes.
- Individual well-being on a holistic level: for a seamless and connected healthcare experience, identify, address, and improve the total patient's environmental well-being, geographic, educational, financial, cultural, socioeconomic, lifestyle/behavioral, and medical.
- Consumer data access and interoperability: integrating and enhancing the interchange of provider data, patient, payer, member and processes to equitably distribute the benefit of aggregated data and systems to all stakeholders.
- Data analytics: using advanced analytics and alternative sources of high variable data, unstructured, non-standard, and disparate to support the transition from volume to value, reduce administrative burdens, improve health outcomes.

✉ Gandikota Ramu
g.ramucse@gmail.com

1 Department of CSE, Vignan's Nirula Institute of Technology and Science for Women, Palakaluru road, Guntur, Andhra Pradesh, India

2 Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh, India

3 Department of Computer Science and Engineering, Institute of Aeronautical Engineering, Dundigal, Hyderabad, TS, India

4 Department of CSE, G. Pullaiah College of Engineering and Technology, Kurnool, Andhra Pradesh, India

Published online: 06 February 2022

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Detection of Plant Illness Using Machine Learning Algorithm

[1] Dr. I.Suneetha,[2] Shaik Rabbani, [3]G.Pranay Teja Reddy, [4]U.Sai Deepthi [5]K.Tejaswi

[1]Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati,A.P. India.

[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract - **The identification of the plant disease is crucial to obtain a good crop yield along with a good quantity of agricultural products. Detection of plant illness includes the research work of many farm-related factors such as organic farming, constant plant monitoring, and recognition of all diseases. In farms that contain entirely different crops, plant diseases cannot be tracked manually. This requires an enormous amount of work, plant disease expertise, and also a substantial amount of time. The image processing along with k-means clustering and convoluted neural networking algorithms could be used for the accurate prediction of the disease. The detection of the disease includes methods including image segregation, pre-processing data, fragmentation of the image, detection, and recognition of characteristics. This paper also examines the binding segmentation and retrieval functions of two different plant diseases.**

***Index Terms*: — image processing, plant disease detection, k-means clustering algorithm, Convoluted Neural Network etc.**

1. INTRODUCTION

Farming accounts for approximately 17%of total GDP [1], providing more than 60 % of the population with employment. The recognition of plant diseases plays an important role throughout the agricultural climate. Indian farming involves plants such as maize, wheat, and so on. With its root and leaf energies, each of these plants is cultivated.

For research in plants with visually recognizable trends, the plant disease experiments apply. The control of plant health and diseases plays an important part in the effective cultivation of plants. In the early times, the person with experience in this field was assigned responsibility to track and examine plant disease manually. This requires a lot of work and considerable time for processing. Image processing methods can be used to diagnose plant disease, and algorithms can be used to predict two different plant diseases. The plant disease experiments apply to research on the plants with visibly identifiable trends. In this article, we have performed a survey on various diseases of plants and specific specialized techniques to diagnose these conditions.

In India about 70% of the populace relies on agriculture. Identification of the plant diseases is important in order to prevent the losses within the yield. It's terribly troublesome to observe the plant diseases manually. It needs tremendous quantity of labor, expertize within the plant diseases, and conjointly need the excessive time interval. Hence, image processing and machine learning models can be employed for the detection of plant diseases. In this project, we have described the technique for the detection of plant diseases with the help of their leaves pictures. Image processing is a branch of signal processing which can extract the image properties or useful information from the image. Machine learning is a sub part of artificial intelligence which works automatically or give instructions to do a particular task. The main aim of machine learning is to understand the training data and fit that training data into models that should be useful to the people. So it can assist in good decisions making and predicting the correct output using the large amount of training data. The color of leaves, amount of damage to leaves, area of the leaf, texture parameters are used for classification. In this project we have analyzed different image parameters or features to identifying different plant leaves diseases to achieve the best accuracy. Previously plant disease detection is done by visual inspection of the leaves or some chemical processes by experts. For doing so, a large team of experts as well as continuous observation of plant is needed, which costs high when we do with large farms. In such conditions, the recommended system proves to be helpful in monitoring large fields of crops. Automatic detection of the diseases by simply seeing the symptoms on the plant leaves makes it easier as well as cheaper. The proposed solution for plant disease detection is computationally less expensive and requires less time for prediction than other deep learning based approaches since it use s statistical machine learning and image processing algorithm.

The whole paper is organized as explained Literature Survey in section II, Section III discusses the types of diseases detection,. Section IV shows the methodology of

International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)

| e-ISSN: 2319-8753, p-ISSN: 2320-6710| www.ijirset.com | Impact Factor: 8.118|

||Volume 11, Issue 6, June 2022||

| DOI:10.15680/IJIRSET.2022.1106165 |

Design and Development of a Drone for Spraying Pesticides, Fertilizers and Disinfectants

[1]N. Dilip Kumar, [2]P.Nandini, [3]G.Pavan Kumar Reddy, [4]V.Vasudeva Reddy, [5]K.SurendraBabu

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

ABSTRACT: There are too many technologies involved in today's Agriculture, out of which spraying pesticides using drones is one of the emerging technologies. Manual pesticide spraying causes many harmful side effects to the personally involved in the spraying process. The Exposure effects can range from mild skin irritation to birth defects, tumor, genetic changes, blood and nerve disorders, endocrine disruption, coma or death. The WHO (World Health Organization) estimated as one million cases of ill affected, when spraying the pesticides on the crop field manually. This paved the way to design a drone mounted with spraying mechanism having pump, liquid storage capacity tank, nozzles to atomize in fine spray, an Quad-copter configuration frame, suitable landing frame, Brushless Direct Current (BLDC) motors with suitable propellers to produce required thrust and suitable Lithium- Polymer (Li-Po) battery of current capacity 22000 mAh and Voltage to meet necessary current and voltage requirements. A First-Person View (FPV) camera and transmitter can also be fixed in the drone for monitoring the spraying process and also for checking pest attacks on plants. This pesticide spraying drone reduces the time, number of labour and cost of pesticide application. This type of drone can also be used to spray disinfectant liquids over buildings, water bodies and in highly populated areas by changing the flow discharge of the pump.

KEYWORDS: Unmanned Aerial Vehicle(UAV), Agriculture, Payload, Sensors, Pump, Spray.

I. INTRODUCTION

Abraham Karem is the man referred to as the founding father of drone technology. He is the pathfinder in inventive fixed and rotary-wing UAVs. Born in Baghdad, Iraq the family relocated to Israel, where he came of age.The first pilotless vehicles were developed in Britain and the USA during the First World War. It was tested in March 1917 while the American aerial torpedo known as the Kettering in October 1918. In 1935, the British produced number of radio-controlled aircraft to be used as a target for training purposes. Although originally built for military purposes, drones have seen rapid growth and advancements and made a break to consumer electronics. They use was as original weapons, in the form of remotely guided aerial missile deployers. However, today, drones have found a wide range of applications for civilian use, especially in the form of small Quad-copters. From ancient history to till now the aircrafts were developed and updated their use and capabilities, as we are seeing in the Ukraine and Russian war how they are utilizing their aircraft powers.Today, drones are used for a wide range of functions. Drones including monitoring climate change, delivering goods, aiding in search and security operations, and in filming and photography. "A drone, in technological terms, is an unmanned aircraft. Essentially, a drone is a flying 1.1. robot that can be remotely controlled or fly autonomously through software – controlled flights plan in their Figure embedded systems, working in conjunction with on board sensors and GPS.

Fig.1 Image of Drone (1918)

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

IoT Based Air QualityMonitoring System

[1]Mr.N. Dilip Kumar, [2]B. Prashanthi, [3]A. Guna Sree, [4]D.Vimal, [5]N. Manisha

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P.

[2,3,4,5] B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P.

Abstract: **The level of pollution has increased with times by lot of factors like the increased vehicle use, industrialization and urbanization which results in harmful effects on human wellbeing by directly affecting health of population exposed to it. In order to monitor this an IoT Based Air Pollution Monitoring System is developed in which the air quality will be monitored over a web server using internet and will trigger alert message when the air quality goes down beyond a certain level. It will show the air quality in PPM on the LCD and as well as on webpage. In this IoT project, the air pollution will be monitored from anywhere using your computer or mobile. This system will be developed by using gas sensor, temperature and humidity sensor, sound sensor, Arduino, GSM and a Wi-Fi module. This system can be physically placed in various cities to monitoring air quality. The sensors gather data from surroundings and forward the data to the Arduino. The Arduino transmits the data to the cloud through the Wi-Fi module. The proposed system predicts quality of air using different sensors and stored data in database and cloud so any one can retrieve data from anywhere anytime.**

Keywords:Arduino, IoT, GSM, sound sensor, Alcohol Sensor, Wi-Fi module etc.

1.INTRODUCTION

The Air Excellence Guide (AEG) may be a common indicator of air quality. The Air Quality Indicator (AQI) is calculated and supported on air pollutants like CO and NO2 compounds that consume opposing possessions happening the atmosphere and human health. The Air Quality Indicator may be a range that represents the very finest meditation of a specific air unused matter at a particular time. I propose an air quality as well as air pollution monitoring system that allows us to monitor and check live air quality as well as air pollution in an area through Internet of Things (IOT). It uses air sensors (Gas Sensor MQ135) to sense presence of harmful gases/compounds in the air and constantly transmit this data. In addition, system keeps measuring air level and reports it. The sensors interact with Arduino Uno (Microcontroller) which processes this data and transmits it over the application. This allows authorities to monitor air pollution in different areas and act against it [1].

In addition, authorities can keep a watch on the air pollution near schools, and hospitals areas. Normally, little concentrations area unit measured exploitation ppb (parts per billion), that represents units of mass of a material per one billion units of total mass. Parts per million (PPM) may be similar and unremarkable used unit to measure concentrations of pollutants. It determines the requirements of a new system and analyze on product and resource requirement, which is required for the successful system. The product requirement contains input and output requirements it gives the wants in term of input to produce the required productivity. The resource requirements define in brief about the hardware that are needed to achieve the required functionality. In this project I am going to make an IoT based Air Pollution Detection Monitoring System in which I monitor the Air Quality over a web server using ESP8266 Wi-Fi device and a trigger alarm when the air quality goes down a certain level means when there is amount of harmful gases is present in the air like CO2. It shows the air quality in PPM

(Parts Per Million) on LCD and webpage so that I monitor it very easily

2. LITARATURE SURVEY

IoT based Air Pollution Monitoring System screens the Air Quality over a web server using web and will trigger an alert when the air quality goes down past a particular measurement, suggests when there are total of dangerous gases present recognizable all around like CO2, smoke, alcohol, benzene, NH3, NOx and LPG. The system will show the air quality in PPM on the LCD and similarly as on site page with the objective that it might be checked in all respects successfully. Temperature and Humidity is perceived and saw in the system. [3] The authors Ray and ParthaPratim proposed a technique which can measure 2.5µm particulate matter in a smarter way. Internet of Things (IoT) based cloud services has been incorporated to analyze the measured data in cloud servers. An optical

ISSN : 0950-0707

Iot Based System For Remote Patient Monitoring System

[1]Dr.N. Pushpalatha,[2]S. Vennela,[3]S. Gowri priya [4]P. Srinivasulu Goud, [5]K.Ajay Kumar
[1]Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.
[2,3,4,5]B. Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract: With an improvement in technology and miniaturization of sensors, there have been attempts to utilize the new technology in various areas to improve the quality of human life. One main area of research that has seen an adoption of the technology is the healthcare sector. The people in need of healthcare services find it very expensive this is particularly true in developing countries. As a result, this project is an attempt to solve a healthcare problem currently society is facing. The main objective of the project was to design a remote healthcare system. It's comprised of three main parts. The first part being, detection of patient's vitals using sensors, second for sending data to cloud storage and the last part was providing the detected data for remote viewing. Remote viewing of the data enables a doctor or guardian to monitor a patient's health progress away from hospital premises. In this project, we have presented an IoT architecture customized for healthcare applications. The aim of the project was to come up with a Remote Health Monitoring System that can be made with locally available sensors with a view to making it affordable if it were to be mass produced. Hence the proposed architecture collects the sensor data through Arduino microcontroller and relays it to the cloud where it is processed and analyzed for remote viewing. Feedback actions based on the analyzed data can be sent back to the doctor or guardian through Email and/or SMS alerts in case of any emergencies.

Keywords: Arduino UNO, Heartbeat Sensors, Temperature sensor, Body movement Sensor, Toxic gas sensor etc.

I. INTRODUCTION

A Remote health monitoring system is an extension of a hospital medical system where a patient's vital body state can be monitored remotely. Traditionally the detection systems were only found in hospitals and were characterized by huge and complex circuitry which required high power consumption. Continuous advances in the semiconductor technology industry have led to sensors and microcontrollers that are smaller in size, faster in operation, low in power consumption and affordable in cost.

This has further seen development in the remote monitoring of vital life signs of patients especially the elderly. The remote health monitoring system can be applied in the following scenarios:

1. A patient is known to have a medical condition with unstable regulatory body system. This is in cases where a new drug is being introduced to a patient.
2. A patient is prone to heart attacks or may have suffered one before. The vitals may be monitored to predict and alert in advance any indication of the body status.
3. Critical body organ situation.
4. The situation leading to the development of a risky life-threatening condition. This is for people at an advanced age and maybe having failing health conditions.
5. Athletes during training. To know which training regimes will produce better results.

In recent times, several systems have come up to address the issue of remote health monitoring. The systems have a wireless detection system that sends the sensor information wirelessly to a remote server. There is also the issue of internet connectivity where some systems to o perate, good quality internet for a real-time remote connection is required. Internet penetration is still a problem in developing countries. Many of the systems were introduced in the developed countries where the infrastructure is working perfectly.

To reduce some of these problems there is need to approach the remote detection from a ground-up approach to suit the basic minimal conditions presently available in developing countries.A simple patient monitoring system design can be approached by the number of parameters it can detect. In some instances, by detecting one parameter several readings can be calculated. For simplicity considerations parameter detection is:

i) Single parameter monitoring system

In this instance, a single parameter is monitored e.g. Electrocardiogram (ECG) reading. From the ECG or heartbeat detection, several

© 201XJETIRMonth201X, Volume X, Issue Xwww.jetir.org (ISSN-2349-5162)

ARDUINO BASED ACCIDENT DETECTION AND MESSAGE ALERT SYSTEM USING GPS AND GSM

[1]DR.N.PUSHPALATHA, [2]M. SANDHYA, [3]M. SHILPA, [4]L. SRAVANI, [5]B.SATYANARAYANA REDDY

[1]Professor & HOD, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P.
[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P.

Abstract: **In present days the rate of accidents can be increased rapidly. Due to employment the usage of vehicles like cars, bikes can be increased, because of this reason the accidents can be happened due to over speed. People are going under risk because of their over speed, due to unavailability of advanced techniques, the rate of accidents can't be decreased. To reduce the accident rate in the country this paper introduces a optimum solution. Arduino based accident detection and message alert system is introduced; the main objective is to control the accidents by sending a message to the registered mobile using wireless communications techniques. When an accident occurs at a city, the message is sent to the registered mobile through GSM module in less time. Arduino is the heart of the system which helps in transferring the message to different devices in the system. Vibration sensor will be activated when the accident occurs and the information is transferred to the registered number through GSM module. GPS system will help in finding the location of the accident spot. The proposed system will check whether an accident has occurred and notifies to nearest medical center and registered mobile numbers about the place of accident using GSM and GPS modules. The location can be sent through tracking system to cover the geographical coordinates over the area. The accident can be detected by a vibration sensor and MEMS accelerometer sensor which is used as major module in the system.**

Index Terms – **Aurduino, GSM, GPS, MEMS Sensors, Vibration Sensor etc.**

1. INTRODUCTION

Now, a day's majority of the road accidents are caused by drink-driving and drowsiness. Drunken drivers will not be in stable condition and so the rash driving is the inconvenience for other users and also question of life and death. In this project we are developing an auto lock system. The input for the system is from detection sensor from alcohol breathes. The controller keeps looking for the output from these sensors. If there are any traces of the alcohol above the set limit, then the system will off the engine. Drowsiness is a state resulting in reduction of consciousness caused due to lack of sleep or fatigue. Due to drowsiness, driver loses control of the vehicle which may deviate him/her from the road and results in severe accidents. According to statistics, the major factor causing accidents is sleepiness of driver. India is a signatory to Brasilia Declaration and is committed to reduce the number of road accidents and fatalities by 50 per cent by 2020. However, over the years, with the increasing growth rate of motorization accompanied by road network expansion and urbanization, India is facing serious impacts on road safety levels. In India the total number of road accidents is increased by 2.5 per cent from 4,89,400 in 2014 to 5,01,423 in 2015. The road accident data analysis of 2015 reveals that about 1374 accidents and 400 deaths take place every day on Indian roads. Few of the major causes for this huge loss are alcohol consumption while driving and drowsiness of driver. In order to minimize this huge number of accidents, advanced driver assistance techniques can be used. For this the driver is monitored using two ways: direct and indirect. Direct monitoring technique consists of head movement; facial expressions captured using sensors like camera. Driver activities and his/her response to specific situation are included in indirect techniques for monitoring drowsiness. A series of actions performed by driver while driving involves eye activities, frequency and the amount of time for which eyes were closed, head displacement with respect to the centre of gravity assists in detecting the driver's current state.

Considering the available statistics, importance of drowsiness detection systems is unavoidable. The main objective of this paper is to design and implement a combination of hardware and software system which will detect driver's drowsiness, especially those diagnosed at the right time to alert which will result in preventing many accidents and save countless lives.

This paper is organized as section II describes Literature review and in section III discussed about concept of vehicle tracking and Section IV describes in Proposed System methodology and Section V shows the Experimental results of proposed methods and section VI concludes the paper followed by references.

2. LITARATURE REVIEW

Now-a-days, mobile phone is used almost by all people. With internet usage are also at all. So these mobile phone also provide communication platform as they are equipped with 2G & 3G network. There are lots of cause of accident of car and they are drunkenness of driver, drowsiness of driver, unconsciousness of driver and many time what happen driver is not responsible for accident but their neighboring car behavior also have made role to enforce accident. There are also some system have been

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

Saliency Detection from Geometric Attributes and Region Centerness

[1]Dr.P.Harish,[2]S.Sai Chandu [3]D.Saikeerthi,[4]G.Venu Gopala Krishna[5]P.Reddy Ganesh

[1]Associate Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati,A.P. India.

[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract- **Recent years have seen many complex models proposed for salient object detection and progressing results. However, less has been done to justify the need for such complex models as there lacks sufficient comparison to simple baselines on more challenging datasets. In this work, we propose a new baseline method for saliency detection. It simply considers a large region close to the image center as salient, and defines the saliency of a region as the product of its size and centerness. As accurate image segmentation problem is difficult by itself, we propose novel techniques that can estimate these attributes using superpixels in a soft manner, without the need to perform hard image segmentation. Our approach is based on very simple concepts and implementation, but already achieves very competitive results, especially on challenging datasets. Therefore we believe our method serves as a strong baseline and would enhance the problem understanding for future work.**

IndexTerms- **saliency detection, geometric attributes region centernessetc.**

1. INTRODUCTION

Salient object detection [1] has attracted a lot of research interests in recent years . The problem is inherently ambiguous since there lacks common definitions and criteria of "what a salient object is". Consequently, the research in this area presents a great amount of diversity, from low level features to high level methodologies [14]. While many new methods have been proposed and steady improvements in evaluation have been shown, it is still unclear to tell how well and to what extent this problem has been solved.

We observed two issues in the current field: complex methodologies and insufficient evaluation. First, recent work uses more complex models. highlight the model has evolved from the previous simple contrast-based method [3,4].

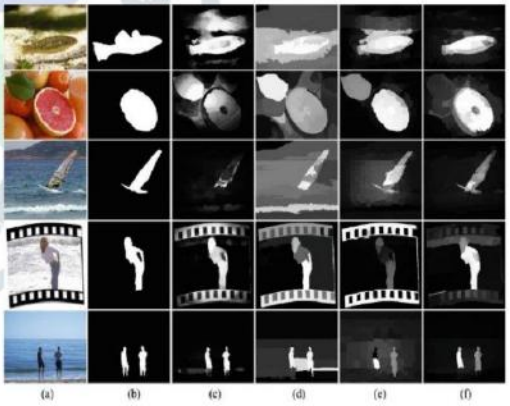


Fig.1: Excellent recognition results in a challenging example. (A) Input image; (b) Ground Truth; (c)-(e) Prior art results; (f) Our results.

From frequency analysis-based methodsto more complex methods such as Gauss Mixture appearance model , low-ranked matrix recovery , multiscale segmentation and optimization , graph-based manifold ranking , Submodular optimization , hypergraph modelling , Markov chains , Learning-based and fusion of multiple models . All these models Motivated, explained, and presented from a unique perspective I did it well. However, size and location are important due to the high complexity and wide variety. New baseline for prominent object detection.

International Journal of Innovative Research in Science, Engineering and Technology (IJIRSET)

| e-ISSN: 2319-8753, p-ISSN: 2320-6710| www.ijirset.com | Impact Factor: 8.118|

||Volume 11, Issue 6, June 2022||

| DOI:10.15680/IJIRSET.2022.1106174 |

Skin Cancer Detection Using FCM and SVM

[1]Dr. P.HARISH, [2]S.MOHAMMAD IRFAN, [3]K.ASHOK, [4] V.INDRAJA, [5] P.PAVAN KALYAN

[1]Associate Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

ABSTRACT: In today's modern world, Skin cancer is the most common cause of death amongst humans. Skin cancer is abnormal growth of skin cells most often develops on body exposed to the sunlight, but can occur anywhere on the body. Most of the skin cancers are curable at early stages. So an early and fast detection of skin cancer can save the patient's life. With the new technology, early detection of skin cancer is possible at initial stage. Formal method for diagnosis skin cancer detection is Biopsy method. It is done by removing skin cells and that sample goes to various laboratory testing. It is painful and time-consuming process.We have proposed skin cancer detection system using SVM for early detection of skin cancer disease. It is more advantageous to patients.The dermos copy image of skin cancer is taken and it goes under various pre-processing technique for noise removal and image enhancement. Then the image is segmented using FCM method. Features of segmented image one extracted by using GLCM method.These features are given as the input to classifier. Support Vector Machine (SVM) is used for classification purpose. It classifies the given image into cancerous or non-cancerous.

KEYWORDS: Thresholding, SVM, GLCM, Skin cancer, Classifier etc.

I.INTRODUCTION

Skin cancer is a deadly disease. Skin has three (3) basic layers. Skin cancer begins in outermost layer, which is made up of first layer squamous cells, second layer basal cells, and innermost or third layer melanocytes cell. Squamous cell and basal cell are sometimes called non-melanoma cancers. Non-melanoma skin cancer always responds to treatment and rarely spreads to other skin tissues. Melanoma is more dangerous than most other types of skin cancer. If it is not detected at beginning stage, it is quickly invade nearby tissues and spread to other parts of the body. Formal diagnosis method to skin cancer detection is Biopsy method. A biopsy is a method to remove a piece of tissue or a sample of cells from patient body so that it can be analysed in a laboratory. It is uncomfortable method. Biopsy Method is time consuming for patient as well as doctor because it takes lot of time for testing. Biopsy is done by removing skin tissues (skin cells) and that sample undergoes series of laboratory testing. There is possibility of spreading of disease into other part of body. It is more risky.Considering all the cases mentioned above, So Skin cancer detection using SVM is proposed.This methodology uses FCM for segmentation and SVM for classification.This technique has inspired the early detection of skin cancers, and requires no oil to be applied to your skin to achieve clear sharp images of your moles. In this way, it's quicker and cleaner approach. But, most importantly, due to its higher magnification, Skin Cancer Detection Using SVM can prevent the unnecessary excision of perfectly harmless moles and skin lesions.

II. LITERATURE SURVEY

In this section, the works carried out by various researchers are as follows:

J Abdul Jaleel[2013]:proposed Skin detection based on Maximum Entropy Threshold, feature extracted by using GrayLevel Co-occurrence Matrix(GLCM), and classification using Artificial Neural Network(ANN). Back-Propagation Neural(BPN)Network is usedforclassificationpurpose.

M.Chaithanya Krishna [2016]: This paper uses segmentation as various clustering technique, features can be extracted by using ABCD (Asymmetry Index Border Colour Index Diameter) method.

A.A.L.C. Amarathunga [2015]: This system used rule based and forward chaining approach to detect skin disease. Proposed system enables user to identify children skin diseases via online and provide useful medical suggestions. Used different data mining classification algorithms (AdaBoost, BayesNet, MLP and NaiveBayes) to predict and diagnose the skin disease. This only works for three skin diseases (Eczema, Impetigo and Melanoma).

Kawsar Ahmed [2013]: In this paper researchers have used various Data Pre-processing methods, Disease Diagnosis, Maximal Frequent Item set Algorithm for training, K-means clustering for segmentation and significant frequent pattern for classification.

The International journal of analytical and experimental modal analysis ISSN NO: 0886-9367

E CAMPUS USING SUPER SENSOR NODES

Deveswari K.S[1], Ramsaikranthi Kirankumar Reddy K[2],Soniya Y[3],Sreenivasulu Reddy C[4] , Vishnu Vardhan G[5]
ECE Dept Assistant Professor[1]
[1]Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh
[2345]UG Students, Dept of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh

Abstract — **In this research work, an approach to develop a university campus in many ways using sensors is presrented. Research work try to figure out many cases related to enviromentaal and physical changes happening in the campus through sensors. The primary motive is to make prototype to implement it into real time to make our campus a smart campus. Proposed work make use of super-sensors which would sense and detect the environmental and physical condtitions and report it in a website. These sensors enable us for more capability of collecting flexible data so that accordingly data can be processed.Also, this research work aims to deploy the proposed super-sensor system in a single class room of the campus.**

Keywords— Arduino Uno, Node MCU, IR sensor, LM35 sensor, LED, DC fan etc.,

I INTRODUCTION

We are trying to make our campus a smart campus which would be our headline objective. here, we are clear with the concept of smart campus where we mean to practically install sensors in such a way that it would report us about the motions happening Using IR sensor and measure tempearture change in the campus through the LM35. We Try to explore many possibilities of how infrastructure of a campus can be used by designing a prototype. At the begining we will try to find out the use cases what are necessary like sensors in the class rooms, groundsm library, auditoriumns, laboratories etc. To be precise in the whole campus.

Our plan is to manually place the sensors in the campus which will include basketball, football, volleyball courts and also in indoor stadium where other indoor facilities like conference halls, classrooms, auditoriums, staffrooms and board rooms. In outdoors of our campus, we would have motion, temperature sensors and in the indoors like class rooms and staff rooms we would have IR and temperature sensors. In common these small-scale sensors will be widely disturbed, understated, insecure, unpretentious, self-effacing too. These need to consume less power in order to be economical and should have low maintenance and their installation should be easy and they must also be fast operating . In terms of privacy, no personal data would be obtained.

II PROPOSED SYSTEM

I Sensor Nodes

A. Specifications

Every single sensor is an analog sensor and nodemcu has only few analog reader so instead we use a arduino uno which accepts analog signals and process them into digital signals which are provided to Nodemcu. Into digital signals which are provided to Nodemcu. Basically nodemcu will transfer the data to the internet that is provided by arduino uno after processing it.

The arduino uno is the main power supply through which power is distributed to all the sensors and nodemcu. The output is taken through arduino through a LCD display and we will retrive the data from nodemcu through a website call adafruit.

We use several daemon sevices to accumlate real time sensor values and the cache data from the local memory. The data is operated through the server using secure TCP/IP connection. generally every main module consists of two connection such as DC power supply and wire internet connectivity but in Nodemcu which consists of DC power supply and no wired ethernett is used instead Wi-Fi connectivity feature provides the nodemcu high reliability and portability.

B. Benefits

In this section, we will clarify the pros and cons of supersensors which are huge sensor nodes that have enough capacity to do more than just provide value to the server. While more power will be used by fat nodes, the operating cost is low and the purchase will be less expensive, meaning that installation costs are lesser.

The most realistic benefit of using general purpose devices for supersensor nodes of the E-Campus infrastructure is that they can be remotely configured and reprogrammed, enabling us to restore the senses of the infrastructure by using existing sensors in a new way or replacing them with new sensors.

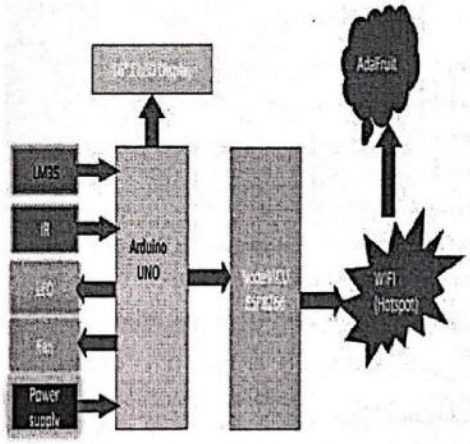


Fig.1. Block Diagram of the proposed method

From the above block diagram we can say that Arduino uno is the heart of the project, It will connect sensors and other appliances.In this project, we will attach all the sensors such as LM35 and IR sensor to the Arduino UNO, it will gather all the information from the sensors and process it for further steps. Once the data is received to the Arduino, it will pass that information to LCD, Nodemcu and also controls the light and fan.Based on the sensor data, Arduino will send commands to turn on and turn off the lights.The

ISSN : 0950-0707

WEB CONTROLLED ROBOT

K.S.Deveswari[1], B.Bharath Kumar Reddy[2],M.Krishnakanth[3] ,N.Kumari[4]

[1]Assistant Professor, Dept. of ECE, Annamacharya Institute of technology and Sciences, Tirupati,

[2,3,4,5]B.TECH Students, Dept.of ECE, Annamacharya Institute of technology and Sciences, Tirupati.

ABSTRACT -This paper describes the design and implementation of an electronic metal detector equipped IoT-controlled robot that can be used in land mine detection without harming the human beings. It can detect covered metals using a metal sensor and also the toxic gases used by the attackers by using a gas sensor. In the existing system, wireless communication rage is limited. But in our design, we use IOT to increase the range of communication. Software programs are integrated into the system so as to test and experiment the ideas that had been formed. A node MCU is used in the robot for internet connectivity. The robot can be controlled via IOT developed platform. As directed by the commands received from the IOT, the robot can make regulated movement.

INTRODUCTION

The Internet of things (IoT) is the network of physical devices such as vehicles, Home appliances and other items embedded with electronics, software, sensors, Actuators. Connectivity enables these objects to connect and exchange data via internet. The use of IOT enables mobility-anywhere and anytime. It also helps to achieve more security and privacy. The IoT allows objects to be sensed or controlled remotely across existing network infrastructure. It results in improving efficiency, accuracy and Performance. This technology is also used in smart homes which enables us to control and monitor electronic devices, thus saving time and energy. This is also used in Agriculture, health care and environment monitoring. A land mine is an explosive device concealed under the ground and designed to destroy enemies as they pass over or near it. It bursts when a certain amount of pressure is exerted on it. It is mainly used in war fields to attack the hostile nation. So, many people have lost their lives. The remaining left unexploded may even cause serious issues. Hence it is necessary to find and remove those landmines before anyone steps on it. Landmines are cheap, easy to make and are generally laid in groups, the area is called as mine fields. This field needs to be cleared soon after the war ends. During bomb diffusal several accidents have happened that has led to the deaths of many people. Nearly a person dies for every 15 minutes. A robot is built to protect the life of humans. Since the landmines are mostly made of metal components, metal detectors are used to detect them. Toxic gases are also used by military people to make their opponent ill and stressful. The presence of toxic gases in the war field is highly threatening and causes several disturbances to the soldiers during battle. These gases are generally cheap to prepare when compared to the nuclear and other weapons. Some of the toxic gases are chlorine, phosgene, carbon monoxide and nitrogen dioxide. They are very harmful to people and they cause eye irritation, vomiting, skin disease and breathing problems. The military people suffer a lot with no way to escape from the gases. So it is mandatory to detect its presence before entering the war field Essential strategies has to be taken to detect and escape from the toxic gases.

Robots can be utilized to complete work in perilous zones and can be used to manage troublesome instability levels in such areas. Gradually robots are becomings dynamically vital for standard subject applications, for instance, Urban Hunt and Salvage and military applications. A variety of small robotic applications now arising where robots are utilized to complete an assortment of errands. By and large, robots are still utilized for unsafe work which is dangerous for humans, e.g., control automaton, spy robot, salvage robot, therapeutic operation and so forth. Metal detecting robot is utilized to search for metal objects covered up in the ground. Military bomb -disposal specialists use metal detectors to scan for area mines covered up beneath streets and in mine fields. Electricians also use metal detectors to scan for electrical cables hidden in walls.

LITERATURE REVIEW

For the last few decades, robots are becoming very popular and common in military organizations. There are many advantages of these robots as compare to human soldier.One of the most important things about these robots is that they have e capability to perform missions remotely in the field, without any actual danger to human lives. This shows a great impact of military robots. These robots are sturdier and more capable of with-standing damage than human. Therefore, they give greater chance of success in dangerous environment. Whenever, a robot is shot down, the military simply roll out a new one. But one should not forget about the certain effects and impact of military robots. In 2009, academics & technical professionals held a conference and discussed the impact of the speculative possibility that robots and computers could become self-sustaining and able to make their own decisions. They also bring forward the possibility and the range to which computers & robots might be able to achieve any scale of autonomy, and to what extent they could utilize such abilities to possibly cause any threat or danger. They briefly discuss about the effects of military robots. In 2016 Battala Venkatarathnam,K.Ganesh, Naveen Kumar published a paper about RF based Metal Detecting Robot we propose a novel Metal and Gas Detecting Robot, in which The robot is controlled by a remote utilizing RF innovation. It comprises of a metal indicator circuit interfaced to the control unit that alerts the client behind it around a suspected area mine ahead. The robot is controlled by a remote utilizing RF innovation. It comprises of a metal indicator circuit interfaced to the control unit that alerts the client behind it around a suspected area mine ahead. In 2016 Luay

Arduino Based Smart And Intelligent Helmet System For Two-Wheelers

[1]A. Mounika, [2]K. Amudha, [3]Y. Sai Ganesh, [4]P. Tharun, [5]K. Lokesh
[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.
[2,3,4,5]B. Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract — Road accidents are becoming very common in the country. The impact of road accidents can lead to the loss of many lives and can also damage many body parts. This situation becomes more serious if the riders won't wear the helmet which can be prevented by wearing the helmet and can reduce these impacts. While riding the bike, the government made it a mandatory rule to wear the helmet. Using this rule as a base, a smart helmet system is proposed which helps in providing safety to the riders and prevents accidents. The system mainly consists of Arduino Uno as a processor for processing the data, GSM & GPS modules for tracking the location and sending a message to authorized numbers, a vibration sensor for alerting, in case the rider meets an accident and alcohol sensors as breath analyzer for the rider. The system will ensure a safe journey for riders and gives a helping hand in case of emergency. The cost of installing the whole system onto the helmet is affordable.

Keywords— Arduino, GSM, GPS, helmet, alcohol detection sensor etc.

I. INTRODUCTION

India has a huge number of road accidents every year. The accidents may be due to many reasons like by drink and drive, driving rashly [1], exceeding the speed limit, etc. Sometimes, the person who gets injured might not be responsible for the accident. It might be the fault of some other vehicle rider [2]. But overall, both riders will get affected. Due to a lack of first aid and emergency medical services on time, the riders may die. Some deaths are [3] due to the ambulance not reaching the desired location on time. In case of an accident, to save time and inform the concerned person, a system is proposed which can make sure that the rider gets the required attention in a short time. In India, many people use two-wheeler vehicles as compared to four-wheeler vehicles because of its low cost and simplicity. In many accidents, the rider gets injured mainly on the head. A helmet plays a very important role in saving the life of the rider. So, to encourage people to wear helmets and to avoid accidents, a design is proposed that synchronizes the module present in the bike with the module present on the helmet. If a rider is not wearing the helmet and starts the bike, it won't start. The rider must wear the helmet to start the bike. The rider when wears a helmet, the module present in the bike synchronizes with the module present on the helmet. There is an MQ-3 (alcohol) sensor that is placed near the bike rider's mouth. If the MQ-3 sensor senses the alcohol content in the rider breath then the bike won't start. After clearing the tests of wearing the helmet and the alcohol sensor test, the bike can start. If the rider meets an accident, then the vibration sensor sends a signal to the processor present on the helmet module. The processor sends the GPS location and a message of the accident to the registered mobile number and a buzzer turns on.

The whole paper is organized as explained in Section II describes the literature review related to the helmets. Section III describes the design of the proposed work. Section IV describes the hardware tools used in the proposed design. Section V describes the result analysis of the proposed work. Section VI describes the conclusion and future scope of the proposed work respectively.

II. LITERATURE REVIEW

There are many previous works done in the field to enhance the helmet for the safety of the rider. Pranjal Hazarika has [4] worked on providing a safety helmet for the coal mine workers. This helmet was provided with a carbon monoxide sensor and a methane gas sensor. The sensor data is transmitted via X-Bee in wireless mode to the control room. Behr C J et al. proposed [5] design for the three basic works with the helmet; detecting any collisions, any person removing

ISSN NO:2347-6648

IOT BASED SMART WASTE MANAGEMENT SYSTEM

[1]A. Mounika, [2]K Susmitha, [3]A. Reddy Eswar Reddy, [4]N.Pradeep Naidu, [5]P. Vamsi
[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.
[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract — Nowadays, wasting food is common among the students in colleges, hostels, and workplaces. This results in a great demand for food products in the future, which may lead to food scarcity for future generations. As food waste management is tedious process. In this paper we have mainly focused on measuring the food waste and providing rewards for the users, where it shows the real-time food wastage of every individual on a screen and in a website for future reference. This research mainly focuses on monitoring the food wastage of everyone. Our model proposed over and create a parallel result to give a detailed report to the managing and the user about their amount of food excess each time. This helps to analyze and generate the list of user falls under the non-food wasting criteria and reward them for their noble act. We can do this either manually or automating the process using Internet of Things as a key tool. We use an RFID sensor to monitor the wastage of individuals. They can be opened only by using the RFID card provided by the management. Basically, we are automating the method of identifying the amount of food wastage in the areas, where we are sure that the amount of food waste can be decreased by the analysis of food wastage by every individual and awarding them with rewards and prices by the reports generated by the system.

Keywords— Internet of Things (IOT), Weight Sensors,Arduino, RFID Sensor, stepper Motor, Motor Driver, Cloud Computing, Food waste management etc.

I. INTRODUCTION

Food management is always a difficult task for the management as it involves a lot of labour work and continuous analysis of food wastage by every individual. This tedious process can be aided using the Internet of Things (IOT) [1]. It is an important application which has the potential to deliver amazing services. Food wastage not only affects the environment but also creates a negative impact on the economy of a nation and creates great demand for food products. In places like hostels, college canteens, office cafeteria the amount of food waste is extremely high because of the carelessness of the employees and students. In fact, that amount of food can feed a lot of people who could not afford their food. If food wastage is monitored individually and providing them with rewards, there is a high chance of reducing the amount of food wastage in those public areas. The solution for this problem can be achieved by using the Internet of Things, Cloud Computing [2].

Security has become the most important issue with the development of the Internet of Things. The waste management objects and objects are combined to the Internet of Things (IOT) date verification system with high productive information's this information requires to be moved over the main server machine. The collected information in the main server is has been analyzed and processed according to the need of the user. In this system uses the cloud computing virtual network to store all the real time information's and analysis of data instantly. The report is generated immediately and effectively of each product in every individual for future reference [3].

It is highly secure as the IOT provides distinct IP addresses for different devices [4], So it is hard to steal data from the server [5]. Now, cloud storage is becoming a trending platform for storing and retrieving the services through the internet. Cloud computing permits the organization to start for free and charges only when we request for more services. All data captured using IOT sensors will be fed into the database for further analytics. But the process of retrieving the data from such a big data lake is exceedingly difficult and, usually the existing system is not capable of processing such volume of data [6], In this case we use Cloud computing over big data to store the details.

This paper is organised as follows: Section 2 outlines the features of IOT, detailing its requirements; Section 3 provides a brief review of the general approaches in Food waste management system describing which ones are desired; Section 4 presents a summary of the findings of the investigation; details an experiment that shows how IOT handles the food waste management effectively ; Section 5 concludes this

HOME SECURITY AND AUTOMATIONUSING ARDUINO

A.S.LAVANYA[1], O.USHA[2],T.V.MAHESH[3] ,M.SAI KRISHNA YADAV[4] ,S.GOUSE BASHA [5]
[1]Assistant Professor, Dept. of ECE, Annamacharya Institute of technology and Sciences, Tirupati,
[2,3,4,5]B.TECH Students, Dept. Of ECE, Annamacharya Institute of technology and Sciences, Tirupati.

ABSTRACT - Home security system is an emerging technology that gained much attention recently by homeowners. The conventional hardwired system is easy to install in newly developed homes; however, the existing homes require complex configuration of such systems which involves substantial cost. Hence, a wireless home security system has been an alternative to the hardwired. This paper describes a simple home security system that is implemented using fingerprint biometrics technology. The systemis known as Biometrics Fingerprint for Home Security (BIOFIHS). BIOFIHS is demonstrated using a prototype that consists of hardware and software components. The hardware includes fingerprint sensors, a microcontroller, a wireless network router, an application server, and a smartphone. For the software, a program is developed to record the fingerprint data and to verify the data on the remote server. All of the components are connected to the home network wirelessly that makes the system easier to implement with cheaper costs.

Keywords – Arduino uno, Biometric module, Solenoid lock, Enrolment, Identification, etc.

I INTRODUCTION

The development of information and communication technology (ICT) currently offers convenience to the users, and it improves various aspects of human life. The technology includes smart home which is also referred to as smart house or home automation. The smart home had emerged and developed since the 1960s when the first home automation processing device named Echo IV was designed. The machine, a private venture by a Westinghouse engineer, was designed to control home temperature and turn on the appliances at home (King, 2015). Meanwhile, Smart House term was first coined in 1984 by the American Association of house builders (Aldrich, 2003). Next, in 1994, BESTA Norway started the project, namely Smart Home technology for elderly housing (Faanes, 2014). However, until the year 2000, the concept of smart home has not been too popular in the community. The discussion of smart home becomes intense in late 2013 as the technology of many homeowners. Current smart home technology allows homeowners to connect various electronic devices in the house to an integrated system that is accessible through a smartphone or other gadgets. The smart home also provides a system that authenticates homeowners to get access to the building for increasing the home security. It aims to improve the quality of life and safety of its occupants. According to Robles and Kim (2010) smart home is the term used for authenticating the residence using the control system that is integrated into a home automation system. The system allows electronic control for the homeowners with only a few buttons that are connected to the simple telecommunications system. Smart home includes communications, entertainment, security, and information systems. Although smart home provides home automation features, many homeowners are not yet ready to go for it. It is due to the reason that designing and installing a hardwired smart home system is expensive and inconvenience especially in existing occupied homes. Hence, a simple and cheaper alternative is needed. Wireless smart home system is one of the solutions to overcome the issue. Unlike the hardwired system, the wireless smart home offers a simpler installation process and cheaper in costs. It is expected that the wireless system can

THE DEVELOPMENT OF WEIGHT DETECTION SYSTEM USING IOT FLOORING

[1]A.S.Lavanya, ,[2]O.Lakshmi Priya,[3]D.Nikhila,[4]V.Devendra,[5]L.Archana

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati,A.P. India.
[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract: — Home safety plays a vital role in homeownership and it has since become the topmost priority for every homeowner alike. Most houses in Malaysia are currently using the Closed- Circuit Television (CCTV) as their home security system, where there are no real time theft notifications being made. The current system uses sensors on walls or motion detectors that can be avoided by thief who could be wearing Infrared (IR) blocking clothes or hide behind objects. Issue of the power cut could also occur. Hence, this system is developed to detect the presence of thieves once they step on the sensor floor. The sensor floor implements load cell sensor which is placed beneath the tiles. Once the thief steps on it, a notification will be sent to the house owner and alarm the house. This system used IFTTT application in order to give notifications to the owner and load cell sensor to measure the weight of a person. Technology Acceptance Model (TAM) theory is applied into set of questionnaires that was distributed through Google Form and has obtained a total of 70 respondents.

Keywords— Load Cell Sensors,Arduino, LCD Display, IFTTT Application.

1. INTRODUCTION

Internet of Things (IOT) has been considered as a key to a smarter city [1]. Monitoring the safety of home has become crucial requirement for the public. Smart homes has established a new beginning of an era in the field of home security [2]. The Industrial Revolution 4.0 (IR4.0) has been based on digital revolution, which include cyber-physical system that connects the world digitally via internet [3]. An example of automation that is used in IR4.0 includes smart homes, smart cars and smart robotics [4]. Automation of task and jobs that does not include human touch is highly on demand in recent days [5]. For purposes of security, IOT was introduced mainly to overcome issues of house break-in [6].

However, despite a majority of houses nowadays are using CCTV and thief alarms as part of their home security measure, there is no real time notification are being made to homeowners [7]. To add to that, current system that uses sensors on walls or motion detector can be avoided by thief who wears Infrared (IR) blocking clothes or hides behind objects. Security may also be compromised with issues of power cut. To close this loophole, the implementation of a new system may provide a solution as the presence of thief can be detected once they step on the sensor floor.

As such, this project is proposing an idea to implement sensor under a floor that detects thief if he steps onto the house floor to overcome this issue. A sensor will be placed at the back of the ceramic tiles [8] and will give an alarm to the house and produce an output alert that notifies the owner through a message that will sent to the owner mobile. This new system would be able to monitor an entire floor as it measures the changes in pressure of floor according to the weight of an object. Once the calculation process is completed using Arduino IDE, this system will give an instant notification to the house owner through IFTTT application.

2. PROJECT METHODOLOGY

In this paper, a System Development Life Cycle (SDLC) has been applied with 6 phases to achieve the project's objectives [9]. The first phases are Project Initiation which is brainstorm idea stage, second is requirement analysis which conducts a review paper, third is design diagram that contains of flowchart, UML diagram and the design of interface. The fourth phase is

Journal of Interdisciplinary Cycle Research

ISSN NO: 0022-1945

SOLAR BASED SMART BILLING FOR TOLLGATE

E.Devisri[1], K.V.Gnanavamsi[2],S.Akhila[3] ,M.Naveenkumar[4] , T.Vamsi[5]

[1]Assistant Professor, Dept. of ECE, Annamacharya Institute of technology and Sciences, Tirupati,

[2,3,4,5]UG Students, Dept. of ECE, Annamacharya Institute of technology and Sciences, Tirupati.

Abstract-Photovoltaic frameworks are quite possibly the most inexhaustible framework which is being utilized nowadays, and it is a green and clean wellspring of energy. The photovoltaic cells create the force from the daylight changing over it into power by the assistance of sun-based cells present in it. Here ARDUINO UNO act as a Heart of the whole circuit. ARDUINO UNO orders the whole piece of the circuit and progresses the program. So, the ARDUINO UNO perceives a substantial card detected by RFID and afterward flags the information to the Arduino for further action. When we scan RFID card with the help of RFID Reader then it goes to a Arduino uno controller & checks the data is correct or wrong. If it's right then it goes to further steps and if it is a wrong, RFID shows the information (or) data is wrong.

Keywords- RFID cards, RFID reader, Solar panel, Battery, Ardunio uno, Power supply unit.

I. INTRODUCTION

In past project there are micro controller. It can only be programmed using either the Assembly code or embedded C both of which requires practice and is too long. Thus why we are introduce the ARDUINO UNO controller. It is also a one of the Microcontroller. It has Micro controller +Crystal + on-board power supply pins, bootloader so that it can be programmed using a simple way through the Arduino IDE and also in our project we have introduce the solar power system. Based on the solar power the entire circuit work on it. Here we are using RFID cards and EM-18 Reader Module.

II. LITERATURE REVIEW

The author mentioned that the micro simulation model for the automated toll plaza system using RFID technology. The 8051 microcontroller is used for the control system. The signal is sent to the PC via RS-232 cable from PIC. In this system, the microcontroller is the main part of the system because of the signal is sent to PC and the output results showed on the LCD display. And then, the microcontroller sent the signal to the motor driver for opening the traffic gate. The author also described the GSM modem to update the information about the database of user account.

The author explained that the RFID based automatic toll gated system. The frequency 928 MHz is used for the communication between RFID system and the control system. The microcontroller was program--med using the C programming language and Visual Basic was used in the serial communication between the computer and the RFID as well as with the PIC.

III. PROPOSED SYSTEM

System Architecture

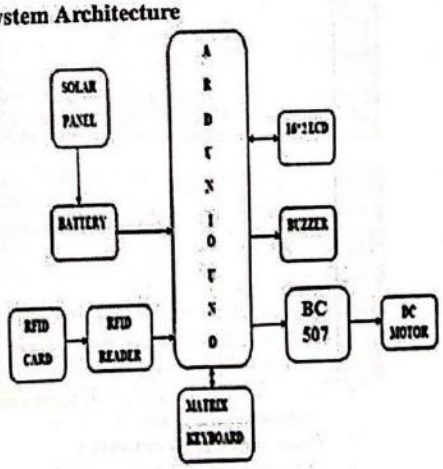


Figure 1 System Architecture

Journal of Interdisciplinary Cycle Research ISSN NO: 0022-1945

Smart Car Seat Belt Accident Detection and Emergency Services in Smart City Environment

[1]E. Devisri, [2]Bharathi. P, [3]C. Triveni, [4]B. Lakshmi Praseeda, [5]G. Badrinath
[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.
[2,3,4,5]B. Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract — Delay in the arrival of emergency team after a road accident is one of the main reasons for the increase in the number of deaths in many countries across the globe. This paper is proposed is to reduce the number of deaths occurring due to accidents resulting from the delaying arrival of emergency services. In our project we designed a seat belt sensor, is used to find whether the driver and the passengers wearing the seat belt or not. If suppose the driver is not wearing the seat belt then the sound sensor will be activated and give some sounds by using buzzer. The heart beat sensor is used to find the heartbeat of the driver, if he has some health problem or change in behavior of the driver. The Vibration sensor is used to detect obstacles and tilting of the car and it will activate when accident occurs. To determine whether accident has occurred, the raw data from the all sensors is collected and the collected data to be send to Arduino microcontroller. If the GPS is used to track the current location of the car where the accident occurs and sends alerting message to the pre-stored contact numbers with the use of GSM.

Keywords— Arduino, GSM, GPS, Seat belt, Vibration Sensor etc.

I. INTRODUCTION

Nowadays, there is an increase in the numberof accidents that happen in the world. As the population is increasing, there is the number of cars increasing on the road that contributes to severe accidents that happen daily. Around 80 per cent of accidents contribute to the loss of many lives. Mostly, the growing countries are being targeted by the day to day road accidents. The major reason is the lack of infrastructure, lack of traffic control and accident management. Out of all the developingcountries, India has been listed as the country with a higher number of accidents [1]. The most prominent reason for the loss of a life during an accident is the unavailability ofimmediate help that can save a person's life by few seconds. The moment an accident has occurred, the life of all passengers travelling in the vehicle is at stake. It all depends onresponse time that can save their lives by a few minutes or seconds. Hence, this response time is very crucial, and it needs to bereduced or at least either improved to save their lives [2]. To contribute to our society and reduce the number of accidents happening in our day to day life, there are several techniquesand mechanisms that can drop down the rate of accidents and can save lot lives. Living in a tech world that is growing day by day with newtechnologies, we can apply these techniques in our society and help them overcome such problems.

The Vision of the Embedded system has come out reach unexpected bounds of today's computing world. It is a concept that not only can impact human's life but also how they function [3]. The heart of IOTis smart sensors without which it would nothave existed. These sensors form a vast network for their communication. They capture minute details of their surroundings and pass this important information to each other. Based on the received information, relevant actions are performed accordingly. It gives an image of the future where non-living objects will be communicating with each other and doing the needful work. The significance of accident detection and notification system is very prominent for our society. Imagine a situation where an accident happened, it is immediately notified to the emergency services. This will result in the rescue of injured people involved in the accident. For the Arduino paradigm be effective, it should have the capability to track the location of the objects (i.e. cars in our case) which can serve tobe useful for the ambulances to reach the location on time [4].

The whole paper is organized as explained in Section II describes the literature review related to the Seat belt. Section III describes the design of the proposed work. Section IV describes the hardware tools used in the proposed design. Section V describes the result analysis of the proposed work. Section VI describes the conclusion and future scope of the proposed work respectively.

Design and Implementation of Vehicle Data Transmission Protocol Based on PRESENT Algorithm

[1]J. Midula Sri [2]A. Naga Srinivasa, [3]P. Likitha, [4]T. Hymavathi, [5] D. Harsha Vardhan
[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology & Sciences, Tirupati, A.P. India.
[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology & Sciences, Tirupati, A.P. India

***Abstract*—In order to monitor the operating status of vehicles, it is necessary to collect vehicle operating data in real time through IoT devices and analyze these data. However, the collected data has the characteristics of multi-source heterogeneous, network resources are limited and server performance is poor. It is difficult to truly realize data processing in real time. In addition, data needs to be transmitted over the network, it is particularly important to ensure the safety of data transmission. Considering the above problems, it is necessary to structure the data and define a unified data format to facilitate data transmission and analysis. At the same time, improve the server communication program and improve the server's concurrent processing capabilities. In addition, considering that data needs to be transmitted over the network, in order to ensure that the data is not stolen or tampered with, the PRESENT lightweight encryption algorithm is adopted to ensure the safety of data transmission. Compared with encryption algorithms such as AES, this algorithm has much lower hardware requirements. This article combines the characteristics of the project and uses the number of communication between the device and the server to achieve the dynamic key update which is approximately one-time pad, and greatly improves the security of the data.**

Keywords—IoT, vehicle monitoring, present algorithm

I. Introduction

The rapid development of mobile networks and the gradual reduction in the cost of IoT devices have provided a good foundation for the development of the IoT industry. The development of the Internet of Things industry not only brings new vitality to traditional industries, but also gives birth to some new industries, such as shared bicycles. However, with the rapid increase in the number of IoT devices, the amount of data has also increased geometrically, and higher requirements have been placed on data processing, transmission, storage, and data security. Now, the Internet of Things technology has been widely used in various industries, but also it has brought a series of problems, such as communication between devices, accessing system and devices management. In view of the problem of heterogeneous data from multiple sources, it is necessary to unify the data format, standardize the data format and content, and preferably be compatible with existing technologies. This will not only facilitate data collection, processing, and transmission, but also reduce the difficulty of data analysis and facilitate database storage. In addition, it is necessary to consider that how to ensure data security in the transmission process. Therefore, some protective measures must be taken to ensure that the data is not stolen or tampered with. However, encrypting the data will consume certain hardware resources. For low-power IoT devices, we need to meet the low-power requirements, and at the same time, we must ensure that the encryption algorithm used can ensure the security of the data to a certain extent.

This article is based on the PRESENT algorithm, combining the characteristics of the project, using the number of communication between the device and the server, a dynamic encryption process that is approximately one-time pad is realized, which greatly improves the security of data, and greatly increases the difficulty of stealing, tampering, and forging. The advantage of the lightweight encryption algorithm is that the hardware performance requirements are much lower than those of encryption algorithms such as AES, and the CPU consumes less power to process the encryption algorithm, which greatly extends the use time of IoT devices and reduces the frequency of battery replacement. This paper establishes a vehicle monitoring system that effectively collects and processes data from an engineering perspective, and realizes functions such as vehicle positioning, personnel management, authority management, equipment management, and condition monitoring.

This article first briefly introduces several technologies used in engineering projects. Section 2 reviews related literature and introduces some lightweight encryption algorithms. Section 3 shows the overall architecture and the implementation methods of the system. In Section 4, we focused on the construction of the cloud platform, data format specifications, and server communication process. In Section 5, we combine the PRESENT algorithm with the characteristics of this project to achieve an encryption process that is approximately one-time pad, and further increase the difficulty of ciphertext being cracked. The last is to show the relevant results and summarize the paper.

II. Related Work

Considering that the IoT devices have the characteristics of low power consumption and limited hardware resources, therefore, the lightweight symmetric packet cipher algorithm that takes up less resources becomes a research hotspot. The algorithms PRESENT, CLEFIA, MIBS and LBlock algorithms have laid the foundation for lightweight block cipher algorithms.

Design of an Efficient Phase Detector Circuit for PLL

[1]J. Haritha, [2]S. Dawood Ali, [3]K. Guru Priya, [4]V. Sai Ravi Teja, [5]B. Venkatesh

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P.
[2,3,4,5]B. Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P.

Abstract: **The requirement for fast, low-power circuitry is growing in today's hardware. Carrier generation and phase locking have become important for transceiver circuits. The phase locked loop (PLL) includes a voltage-controlled oscillator (VCO), a phase detector, a loop filter and a frequency divider. The voltage-controlled oscillator (VCO) and frequency divider consume the most power. The phase frequency detector dependent phase locked loop (PLL) is an essential part of the transceiver. A phase frequency detector prevents a false lock condition in PLL applications, in which the PLL synchronizes with the wrong phase of the input signal or with the wrong frequency. This article introduces a CMOS digital phase locked loop that is offered with a low power voltage-controlled oscillator (VCO) circuit and a phase detector circuit using 45nm CMOS technology.**

Keywords— Digital phase locked loop (DPLL), CMOS, VCO, Frequency divider y

I. INTRODUCTION

The customary PLLs utilize simple strategies and the old style digital PLLs utilize a mix of simple and digital methods to accomplish tough functions and operations of the circuits. In any case, incorporating a analog PLL in a digital boisterous condition is troublesome [1]. The Analog PLL (APLL) are sensitive to handle process variations and must be upgraded for each new iteration. These noise sensitive analog circuits are affected by noise caused by the digital switching resulting in a significant amount of noise which is coupled through the substrate and also through the power fluctuations. Advancements made in all the digital executions of the phase locked loops give us the improved usefulness and adaptability. The Digital Phase Locked Loop (DPLL) has better convenient in shifting from one place to the other as they are smaller in size and can be utilized in microcontroller or system on a chip (SOC) application and are not dependent on process variations. It limits the cost and time required to design the DPPLs. The amplitude, phase and output frequency can be decisively controlled under digital processor control with the help of a Digital frequency divider (DFD)[3-5]. This proposition will mainly concentrate on the PLL design utilizing digital techniques. As the attribute size of the VLSI innovation keeps on contracting, completely integrated digital methods are more adaptable and versatile in numerous applications than their analog components.

II. PHASE LOCKED LOOPS (PLLS)

Phase lock loops act as a very necessary part of the transceiver as they lock the phase of the feedback signal with the input signal. These components are broadly used in integrated circuits (IC). These are mostly used for clock recovery in communication. It is also used in frequency synthesis where PLLs are used to produce a clock which depends on a previously present clock. The phase lock loops are broadly used in numerous applications, for example, synchronization circuits, frequency synthesizers, recovery of clock and clock and carrier generation circuits [7]. These are generally installed in cellular RF CMOS circuits. Also, they are significant blocks for embedded systems such as mobiles, chain transceiver of RF sensors, microprocessors etc. They are also even expected to show up on other digital circuits like FETs, digital signal processors and gate arrays.

The basic building blocks of PLL are Phase Detector, Frequency divider, Voltage controlled oscillator (VCO) and Loop filter. Phase locked loops (PLLs) are the regenerative systems which create signals whose phase is synchronized with the phase of given input signal. PLLs are utilized to create a signal of multiple frequency of original signal and a signal with a programmable frequency [9]. Therefore, PLLs are utilized to track phase and frequency variations of input signals and lock them with desired phase or frequency. If the frequency and phase of the two input signals are synchronized or same, then the PLL is supposed to be in the locked condition. The loop is said to be locked when the phase difference between the reference signal and input signal is already a known value. PLLs are mostly utilized in microprocessors of high performance and in present day communication systems due to their versatility. They are also utilized in applications to control the speed of a motor, frequency modulation, frequency demodulation, recover the clock, generating the carrier within a given input signal whose carrier signal is suppressed and in controlling the frequency of equipment of communication. They are also utilized to synchronize the local clocks with the other desired signals [10]. They are grouped into four distinct

Car Parking Allocation System Using Arduino

[1]Mrs. K. B. Meenakumari [2]P.Meghana, [3]M.Lokesh, [4]P. S. Janani, [5]V. Govardhan
[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati,A.P. India.
[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract: **The aim of this paper is to provide a simple automatic car parking allocation system with basic components like microcontroller that provides solution to the problems in car parking allocation. Parking allocations provided in shopping complexes, malls, multi-store buildings etc usually have persons allocated to supervise manually the traffic and to allocate spaces available for parking, directing vehicles to be parked without any disturbances making the process more complex. A simple parking automation system with IR sensors provided at the parking space to detect the presence of vehicle parked, LED notification board to show specific empty parking slots and a display to direct individuals can avoid trafficking at the gateways of parking slots and helps them to park their vehicles easily. Therefore, the proposed research work designs and implements a prototype system model, which will regulate trafficking in parking garages along with providing information to the drivers about the availability of spaces. Also, a gate has been provided with servomotor whose main function is to allow and restrict vehicles inside and outside the parking garages by opening and closing the gate with respect to the information obtained from the IR sensors in the entrance and based on the information from the IR sensors in the parking slots.**

Keywords:(Infrared)IR Sensor, Microcontroller, LED's, Servo motor

1. INTRODUCTION

Parking allocation system in shopping complexes, multistore buildings, apartments usually have parking slots, garages regulated by human interferences. Once upon a time, on our visit to LULU mall in Kerala, there arises a situation to park our car. Since it's a peak hour many cars were there resulted in time loss and heavy traffic is seen in the gateway. There were no regulating systems in allocating spaces. Some security guards were employed to regulate traffic and allocate space which didn't work as people don't let them work properly. This results in chaotic congestion when more vehicles are to be parked at a time in a specified area. Hustling in the gateways is very common during peak hours because many vehicles will get accumulated at the entrance and it will be very difficult to regulate the traffic there. Apart from this, it is a time-consuming process to find a perfect place to park the car of any individual. There are no proper indications given in the gateway about the availability of spaces inside the garage. The driver has to go all the way inside with his/her vehicle to find a proper empty space to park their vehicle and incase of not availability of spaces the driver has to come out to through the entrance and search for space in another floor Hence high traffic congestion exists in the gateway of the parking slots especially during peak hours and the time loss in that process could be avoided by reducing human interference in allocating parking slots along with providing information about the empty parking slots available. These are some of the inferences we have experienced personally in our visit to shopping complexes, malls etc. The parking fees collection outside adds more trouble to it. In order to get rid of this problem, a proper indication about the spaces available for parking must be given in the entrance gateway itself about the availability of space for parking vehicles. Thus, a system should be designed with sensors, gates, indications and displays to regulate parking allocation to help People park their vehicles easily must be designed. It will reduce the traffic congestion along with saving a lot of time in finding an empty slot for parking the vehicles of individuals. This paper will explain a simple car parking allocation system that will regulate the parking process and allocate spaces for vehicles to be parked. Excess vehicles coming will be redirected because the gateway will be closed if all the spaces are occupied inside. The information regarding all these will be displayed helping the customer

.

Project Objective:

- Our project aims at regulating parking allocation system with accuracy without any human interference to avoid the traffic congestion before parking slots with basic electronic components.
- It is designed in such a way to be implemented in shopping complexes, malls, multi-store buildings, apartments to regulate parking allocation especially during peak hours.
- It displays the number of empty parking slots available at the entrance itself thereby reducing the time loss that happens in searching for empty parking places. It also displays the specific space

International Journal of Scientific Research in Science and Technology
Print ISSN: 2395-6011 | Online ISSN: 2395-602X (www.ijsrst.com)
doi : https://doi.org/10.32628/IJSRST

Farm Animal Location Tracking System Using Arduino, GPS and GSM

Mrs. K. B. Meena Kumari[1], A. Sivaramakrishna[2], V. Pavan Kumar Reddy[3], B. Vasundara Devi[4], M. Venkataramana[5]
Assistant Professor[1], B. Tech Students[2,3,4,5]
Department of ECE, Annamacharya Institute of Technology and Sciences, TIrupati, India

Article Info
Volume 9, Issue 3
Page Number : 560-565
Publication Issue
May-June-2022
Article History
Accepted : 03 June 2022
Published : 15 June 2022

ABSTRACT

Every living creature has equal importance in this ecosystem. But the lives of the animals are in danger. Because animals usually have a habit of walking freely in the farms and forests, if any accidents or any mishaps happen to the animals in the farm or forest no intimation will be available.

If they got any injuries or any other sickness which causes death. In that situations farmer or forest officers may not know the location of the animals in that kind of big areas. In order to avoid this problem, we have implemented the concept of animal tracking using GPS and getting messages using GSM.

Keywords: GSM, GPS-based animal tracking

I. INTRODUCTION

To approach the issues in farm animal and to understand the complicative relationship of animals with their surroundings, the GPS tracking system is introduced by tagging the animal with radio transmitters and receiver to locate easily. An application that needs real time, fast, and stable data processing is a GPS-based animal tracking. GPS is one in various of the technologies that are utilizing in an infinite number of applications today. This tracking system can tell you of the location and route travel by the animal, which information of an observed from the opposite remote location. It includes the web application that provide you with the precise location of the device. This method enables us to trace the objective in any climatic condition. This method uses GPS & GSM technologies. The easiest way for tracing the animals in on the earthly system almost like GPS has presented. This method enables simultaneous tracking of a huge number of animals with transmitters that are light weighted, long-standing, more precise and economical than the any other automated positioning transmitter. With developments in technologies, there has been an increase in the usage of animal tracking system. The design of animal tracking system enables the displays of an animal's position on google maps.

II. EXISTING SYSTEM

A radio tracking system for animals in the vhf method can be explained by taking the base station into consideration. This base station can be used to broadcasts coded signal to a radio collar once every 20 seconds. Then pager inside collar receives signal and activate the LORANC receiver. The LORAN-C (Long

ISSN NO:2347-6648

Parishodh Journal

DESIGN OF ENERGY MONITORING SYSTEM USING AURDUINO

Kalyani k[1], Rajya Lakshmi G[2],Pavani V[3],Yogipriya S[4] , Vinod Kumar T[5]
ECE Dept Assistant Professor[1]
[1]Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh
[2345] UG Students, Dept of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh

Abstract — **Most traditional factories face intense problems of energy monitoring which result in lump costs, energy consumption and reduce profit margin. In this paper, we design an energy monitoring system to be installed in a traditional factory setting for proper energy management. The design is based on a low cost Arduino micro controller,non-invasive split-core current transformer, relay module, and voltage transformer. The sensor data of the developed system indicated that the prototype can successfully record RMS voltage and current, real and apparent power, power factor, and energy with great accuracy. Through the proposed energy monitoring system, traditional factories have an overview of amount of energy they are consumed at a particular time which may reduce energy costs, reduce carbon emissions and environmental damage and increase the profit margin of the traditional factory.**

Terms—Split Core Current Transformer, Arduino, Energy Monitoring, RMS Current, RMS Voltage, Power Factor, Real Power, Apparent Power.

I. INTRODUCTION

Electric energy plays a crucial role in the economic and social development across the entire globe and the quality of life of its citizens and consumers as it drives fundamental processes of manufacturing processes in industries [1-3]. It significantly contributes to the backbone of the global econ omy with per capita consumption increasing by 14.3% from 2005 to 2019 [4]. The manufacturing industry that dominates the global economy accounts for about 42.3% of world electric energy consumption [3,4]. The demand for electric energy has escalated in households and industries with the use of different electric and electronic loads day in and out. This has uplifted a concern to be addressed to many developed and developing nations with the demand for an immediate increase of electric energy especially in traditional factories alongside its monitoring parameters and control systems [1,2]. Electric energy waste is caused by a variety of factors, including, but not limited to, a lack of proper rules and regulations, incorrect application of established standards, and the absence of energy monitoring systems in some households as well as in business environments such as industries [2]. The key to reducing high electricity bills is to provide consumers with a better understanding of when and where electricenergy is consumed [4,5]. Thus, there is a need to enhance the reduction of energy consumption and graduate traditional factories to smart factories by imploring real-time energy consumption monitoring techniques and control systems. The use of embedded system technology for energy monitoring and control systems will satisfy the need for factory machinery to be more efficient and the need to minimize energy costs by optimizing industrial processes [5]. This paper aims to develop a cost-effective smart energy monitoring and management system that facilitates consumers for energy management and limits the loss of energy specifically in traditional factories.

I. LITERATUREREVIEW

There has been research interest in energy monitoring systems. For example, in [4], the authors proposed the process of managing the energy consumption in intensive energy sectors like industries which monitored electrical machines to understand their energy profiles. The proposed system in [4] did not interface the use of a voltage transformer to measure variations of Root Mean Square (RMS) voltage and was also costly to setup. Further, an energy monitoring and management system in houses has been proposed in [5] where residents can have an overview picture of energy they are consuming in real-time and be able to control electrical loads. The system utilized simple low cost and reliable electronic components using a low power consumption microcontroller. The drawback of the proposed system in [5] was that they used an invasive current transformer which would require re-wiring of traditional fac tories if it was to carry out energy monitoring. The system was also implemented in a home setting where high current loads are not mostly used hence not suitable for traditional factories. In [6], the authors analyzed the existing approach in the implementation of an energy monitoring system based on the Arduino microcontroller. The work in [6] follows the approach of artwork in monitoring energy using a non-intrusive approach. However, the system did not interface the voltage transformer to the microcontroller to collect RMS voltage sensor data and did not employ a control system to control appliances.

II. SYSTEM MODEL AND DISCRIPTION

A.SYSTEM MODEL

The proposed system model (in Fig. 1) for the energy monitoring and control system of traditional factories consists of several modules which collectively work hand in hand to gain desired results

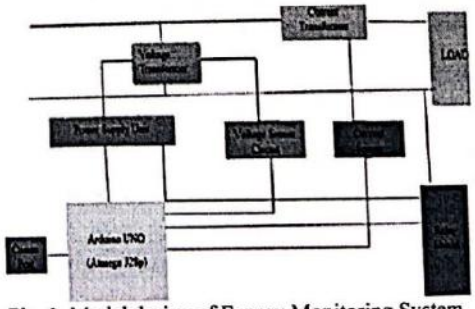


Fig. 1. Model design of Energy Monitoring System

ISSN : 0950-0707

SMART INDUSTRIAL SECURITY SYSTEM USING WIFI

K.KALYANI[1], V.YASWANTH[2], K.BALAJI[3] ,S.THOUID PASHA[4] , T.ASHOK KUMAR[5]

[1]Assistant Professor, Dept. of ECE, Annamacharya Institute of technology and Sciences, Tirupati,

[2,3,4,5]B.TECH Students, Dept.of ECE, Annamacharya Institute of technology and Sciences, Tirupati

Abstract— In today's fast-moving world, a key factor that every individual is looking for in their home or office or an industry is security. Security plays a vital role in a man's life to safeguard their property from being stolen or damaged physically. Personal safety is as important as safeguarding our properties. Especially in industries where people work with dangerous and more secured machines, it is the responsibility of the owner to restrict and prevent the unnecessary entry of the people in restricted areas. With a rise in the crime rate all over the world, it is our duty to safeguard and protect our loved ones and belongings from theft and damage. To overcome the drawbacks of the previous methods, the proposed research work aims to provide a way of protecting people from entering into the areas that are restricted and avoid industrial accidents due to unexpected flame in two-stage security level by the use of Arduino uno. The first level involves the security that is placed in front of the gate to avoid the illegal entry of people and also the person who is affected with contagious diseases using the temperature sensor. The second level is the one that is located in front of dangerous places or near restricted areas so that it prevents any unauthorized person to enter those areas by using wifi. Additionally, fire sensors are placed.

Keywords security--- Arduino uno, temperature sensor, wi-fi, fire sensor.

NTRODUCTION

In day-to-day life, security plays a major role in the protection of lives. Security is a primary need for everyone and everywhere. Every individual looks for safety and security in their homes, industries, banks, etc., Theft has increased a lot and the death rate due to industrial accidents has raised gradually and not everyone can afford costly security systems. The various alert system to alert the processor or holder about the unauthorized entry of people into the area exists. With the advancement in technologies and the integration with the earlier technologies, the smart system with high security is becoming a reality. A type of wireless transmission i.e. wi-fi technology which is widely used for the purpose of transmission or communication of data gives a connection to devices connected and the data or information can be shared easily. The transmission type assures protection against interference and ensures safety in sending information for a range of few meters. One way to access the wi-fi is by the use of Arduino – a controller, which has the ability to read inputs like the motion sensor.

Arduino is being considered as the brain of thousands of projects, that includes daily objects to scientific instruments. This system utilizes the microcontroller-based control system that make use of the wi-fi to receive the instruction from the mobile. The RFID contains a digital data that will be encoded in smart labels or primarily called as RFID tags, which are captured by a reader via radio waves. The data from a tag or label are captured by a device that stores the data in a database, which can be utilized for attendance monitoring. These tags contain unique id numbers in them.

This wireless security system allows only the authorized persons into the restricted areas, thus enabling security to the machines. For this purpose, the wi-fi module is utilized in the most effective manner to avoid illegal entry into the restricted areas. Additionally, the flame sensor present alerts about the flame accidents that occur thus saving the lives of the workers. Thus, the system provides enhanced security with a simple system.

II. COMPONENTS USED

A. ARDUINO UNO

Figure 1 : ARDUINO

Arduino UNO, a microcontroller board which is open-source is based on the

Power Reduction in Domino Logic using clock gating in 16nm CMOS Technology

[1]V. Vijayalakshmi, [2] B. Mounika, [3]K. V. Bhanu Prakash, [4]P. Deva Nandini, [5]M. Murali
[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.
[2,3,4,5]B. Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract—In this paper, a new technique of power reduction in a cmos domino logic is proposed. The proposed technique uses clock gating as well as output hold circuitry. Clock is passed to the domino logic only during the active state of the circuit. During standby mode, clock is bypassed while the state of the circuit is retained. A 2:1 multiplexer is used for clock gating and for retaining the state of the circuit. Simulation results are being carried out in a 2-input Nand gate, 2-input nor gate and 1-bit conventional full adder cell in 16nm cmos technology. The power of the proposed circuit is reduced to an average of 99.37 percent with respect to standard domino logic. Propagation delay is slightly increased to an average of 4.53 percent. Area of the proposed circuit increases to four transistors per domino module.

Index Terms—Dynamic, Domino, static power, clock gating, cmos

I. Introduction

To achieve higher performance of the cmos device circuit along with high densities, there have been reductions in supply voltages, device dimensions and transistor threshold voltages over the years. But these reductions have also resulted in higher leakage currents that can severely affect power consumption in a circuit. The power comsumption of any cmos VLSI circuit is composed of dynamic power and static power. The dynamic power dissipation is due to the switching activities of the circuit while the static power dissipation occurs due to the leakage components of the circuit during the standby mode. During submicron technology when the feature size was greater than 350nm, the leakage power.

Dissipation was smaller than dynamic power by several order sofa magnitude [1]. With technology scaling there is a need of lowering of supply voltage and threshold voltage of VLSI circuits. However, lowering of threshold voltage increases the static power dissipation. In ultra-deep submicron technology where the feature size is lesser than 100nm, static power dissipation has dominated the dynamic power. Thus, there is need for reducing the static power dissipation in ultra-deep submicron technology.

Domino Logic has proved to be a useful circuit in VLSI technology. Domino logic has various advantage like small area and high-speed operation as compared to its static cmos counterparts [2]. It uses the best property of static and dynamic logic without suffering from the load capacitance sensitivity as in pure dynamic logic [3]. Domino logic is a clocked logic family which means that there is a clock in every logic gate. The continuous switching of clock in domino logic design leads to the higher power dissipation. Many techniques have been proposed to lower the power dissipation in domino logic module like scaling the supply voltage [4] or using low-swing clock [5] but a little focus has been given to clock gating technique. A clock gating technique have been used in [6] which uses clock enabler circuit.

A. Contribution

In this paper, a clock gating technique is applied during the static mode of the domino logic which significantly reduces the static power dissipation to an average of 99.37 percent as compared to the standard domino logic module. The state of the circuit is retained during standby mode. A little loss in performance of up to 4.53 percent is recorded during the simulation. Thus, the proposed design is suitable for low power applications.

II. Operation of Domino Logic

A domino logic module consists of a pull-down network (PDN), dynamically connected, followed by a static inverter [7] as shown in figure 1. The non-inverting output of domino is represented by signal out while domino node is represented by X. The PDN is built exactly as that in complementary cmos. The domino module works in two phases - precharge and evaluation, where the signal clock controls the mode of operation as shown below:

$$clock = \begin{cases} 0, & \text{precharge phase} \\ 1, & \text{evaluation phase} \end{cases}$$

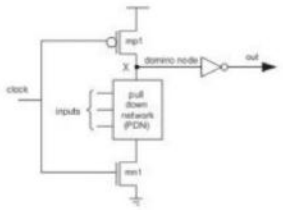


Fig 1: A Standard Domino Logic

Journal of Interdisciplinary Cycle Research ISSN NO: 0022-1945

IOT Based Load Sensing Seats and Controlling Fans and Lights

[1]M. Lakshmi Narayana Reddy, [2]A. Hima Bindu, [3]N. Sathish, [4]P. Siva Dinesh Kumar, [5]S. Vignesh
[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.
[2,3,4,5]B. Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract: **In the present scenario, with the advancement of technology electricity plays an important role in our life. As the usage of electricity increases, the production also increases leading to the depletion of non-renewable resources, so conservation of electricity is the need of the hour. People tend to leave the lights and fans of the room switched on which adds to the power wastage. This project emphasizes on automating the lights and fans of the room by using an energy-efficient system based on IOT using Arduino. Earlier works done on this issue has used motion sensors, load cells, and IR sensors to detect human presence in the room. These systems tend to be bulky and less accurate in detecting human presence. We propose a new method of load sensing based on the Force Sensing Resistor (FSR) sensor. FSR combines smart, lightweight, and power-efficient technologies for force and pressure sensing. Our designed system of smart seats is different, compact, and more energy-efficient. This kind of system will be extensively useful in places where the majority of the work is done seated. Such as office spaces, schools, college classrooms, salons, homes, trains, etc. It would help to lower energy the cost, prevent future resource depletion, raise the quality of life, and make a greener come to cleaner Earth**

Index Terms: **Pressure Sensors, ESP8266 Wi-Fi Module, IOT, Fans and Lights**

1. INTRODUCTION

We are reaching the age of full automation. And with increased automation comes increased power consumption. There is a constant demand to automate things while minimizing power consumption for the same. So here we propose a load sensing seat with automated light fan control. People usually forget or don't care to switch off lights, fans after use on public properties. This leads to a huge power wastage. So our proposed system senses when a user is using the seat and only then switches on the lights also allows user to operate the fan as long as user is sitting on the seats. This puts forward a method to provide automated service to train and flight travelers while at the same time avoiding any unnecessary power usage. Our system consists of load sensors that are to be embedded in seats in order to detect if a human is sitting on it. After sensing user the system gives signal to the microcontroller and switches on lights automatically, also system activates fan switch as long as user is seated in the seat. After getting up even if the user forgets to switch off the fans or lights, the system automatically detects this and switches off the lights and fans automatically. Thus it saves a lot of power while providing an automated light fan switching system.

In most of places, except those where energy represents a large percentage of turnover costs. energy saving is a neglected item and indeed in many industries few people are 'turned on' to energy saving because no priority is accorded to this from the top. We believe that an essential ingredient of motivation in energy conservation is commitment from the top. With this commitment it is possible to get motivation at all levels in the organization but without it the true potential for energy conservation will never be achieved. You've got to be 'turned on' if you're going to 'turn off'.

The internet of things, or IoT, is a system of interrelated computing devices, mechanical and digital machines, objects, animals or people that are provided with unique identifiers (UIDs) and the ability to transfer data over a network without requiring human-to-human or human-to-computer interaction.

Internet of Things (IoT) is the networking of physical objects that contain electronics embedded within their architecture in order to communicate and sense interactions amongst each other or with respect to the external environment. In the upcoming years, IoT-based technology will offer advanced levels of services and practically change the way people lead their daily lives. Advancements in medicine, power, gene therapies, agriculture, smart cities, and smart homes are just a very few of the categorical examples where IoT is strongly established.

1. **Low-power embedded systems:** Less battery consumption, high performance are the inverse factors that play a significant role during the design of electronic systems.
2. **Cloud computing:** Data collected through IoT devices is massive and this data has to be stored on a reliable storage server. This is where cloud computing comes into play. The data is processed and learned, giving more room for us to discover where things like electrical faults/errors are within the system.
3. **Availability of big data:** We know that IoT relies heavily on sensors, especially in real-time. As these electronic devices spread throughout every field, their usage is going to trigger a massive flux of big data.
4. **Networking connection:** In order to communicate, internet connectivity is a must where each physical object is represented by an IP address. However, there are only a

IMPLEMENTATION OF OPTIMIZED PARAMETER BASED HIGH SPEED OPERATIONAL AMPLIFIER FOR ANALOG SIGNAL PROCESSING

M.Lakshmi Narayana[1], P. Saiprathyusha[2], K.Vinay Jaswanth[3], K. Sravani[4], K. Sruthi[5]
[1]Assosiate Professor, Dept of ECE, Annamacharya Institute of Technology and Sciences, Tirupathi.
[2,3,4,5] UG Students, Dept of ECE, Annamacharya Institute of Technology and Sciences, Tirupathi.

Abstract--The most domineering device in the field of electronics is the Operational Amplifier owing to its widespread appliances via analog computation and signal processing. The major objective of this paper is to design and implement a two-stage complementary metal-oxide-semiconductor operational amplifier through precise specifications and also investigate the different outcomes concerning several parameters as well as process variations. The two-stage complementary metal-oxide semiconductor Operational Amplifier operates under ±1.8V supply voltage and the simulation is performed through Cadence Virtuoso having 180nm technology. The important consideration throughout design of this Operational Amplifier circuit is its feasibility concerning the environment and appliance. Moreover, the feasibility of this circuit vastly depends upon the process variation, which brings about a significant impact over analog circuits in terms of quantifiable and foreseeable deviation of the output. Therefore, to determine the process variation as well as feasibility of the circuit, different simulations such as Monte-Carlo and Corner analysis have been performed for validation and specified gain of 60dB, phase margin of 58.7 degree and power dissipation of 302.55 microwatt have also been achieved.

Keywords—Gain, Bandwidth, Tanner eda, AC Analysis, DC Analysis, Transient Analysis.

INTRODUCTION

Operational Amplifier (Op-amp) is the elementary configuration of analog very-large-scale-integration (VLSI) circuits. Analog circuits like comparators, differentiators, digital to analog converters (DACs) and integrators utilize Op-amp, which makes it more application-specific [1, 2]. There are two types of Op-amp, where the first one is inverting Op-amp and the second one is non-inverting Op-amp. Scaling of a device leads to reduction of power consumption, area etc., which is always needed and remains the key objective. The inflection done here is the reason behind the improved competence and the frequency of operation [3, 4]. The major difficulty stays in the design and implementation of two-stage complementary metal oxide semiconductor (CMOS) Op-amp sustaining many parameters into deliberation which are restraints. Here, the gain of the circuit primarily depends upon the width to length ratio, i.e. (W/L) ratio. [5, 6]. Nonetheless, for the performance improvement and stability matching purpose, surge in gain is required.

As demonstrated in Fig. 1, the device comprises of two stages. The initial one is differential amplifier, whereas the latter one holds common source. There are two inputs in the differential stage, which are named as Vin+ and Vin-. Vin+ represents as non-inverting terminal and Vin- as inverting one. The second stage is the gain boosting stage [7], which is required even after the amplification of the signals finished in the first stage [8]. Hence, output of the initial stage continues towards the second stage, which is a common source for further boosting of the gain [9]. Compensation circuits are also utilized in the negative feedback condition to uphold the electronic device stability and attain lower gain which is a common source for further boosting of the gain [9]. Compensation circuits are also utilized in the negative feedback condition to uphold the electronic device stability and attain lower gain at higher frequency.

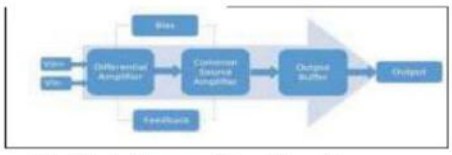


Fig: Block diagram of Two-Stage Op-amp

LITERATURE SURVEY

SINGLE STAGE AMPLIFIER:

A single stage transistor amplifier has one transistor bias circuit and other auxiliary components Although a practical amplifier consists of a number of stages yet such a complex circuit can be conveniently split up into separate single stages.

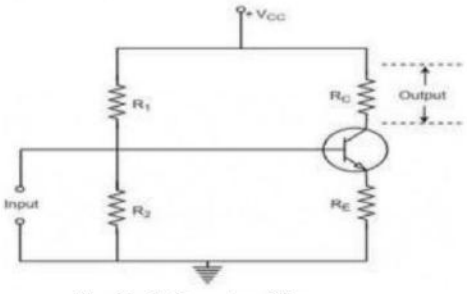


Fig: Single Stage Amplifier

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

RFID Based Smart Vehicle Parking System Using IoT

[1]P.Rajesh, [2]S. Mahesh, [3]B. Bheemesh, [4]V.Hemanth, [5]K.Adarsh

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract: **With the vast growing influx of population in the developed, industrially and technologically sound urban cities, an urgent need to make the cities smart is surmounted. The cities are made smart utilizing data sharing, artificial intelligence, machine learning, analytics, and thousands of RFID tags and sensors. One of the significant concerns of today's smart cities is the growing need to manage the vehicles on-road as well as to create sufficient and well-managed parking lots to prevent urban areas from traffic congestion. This leads to a call for highly automated parking management system self-sufficient in guiding the driver to an available parking space in the nearby area. The proposed system has been implemented with the help of Arduino Uno board for vehicle parking and Node MCU to connect parking area with web or internet. The proposed system incorporated an infrared sensor in each slot for getting information about the vacancy position of the parking slot. The user book-parking slot well in advance, all the necessary information is available on the server. Every user has an exclusive username and password. In case any misuse happened then the system will alert the responsible person.**

Index Terms: **IR Sensors, ESP12 Node MCU, IOT, WIFI, RFID Tag etc.**

1. INTRODUCTION

The Internet of things (IOTs) is a vital technology, it is playing a crucial role in the day-to-day life of human beings. With the help of this technology, now day's humans are getting effective output with very little effort. It reduces the man-made errors made by humans due to negligence [1]. As technology advances, smartphones are an inevitability for every human being. The proposed parking system effectively manages the parking space and it will manage collision among the vehicles at the same time. IoT-based smart parking organized the parking lot very efficiently. It helps the user to find a free space in the parking slot within no time. It ultimately leads to saving time and fuel for the user's [2] [3]. For the development of an innovative parking system, Wireless Sensor Network (WSN) represent two of the most capable IoT technologies i.e. Ultra-High Frequency (UHF), Radio Frequency Identification (RFID), etc. Due to low-cost, low-power technology RFID is used. RFIDs are used to transmit data when powered by the electromagnetic field generated by a reader mainly involving passive devices, named tags [4] [5] [6]. In a variety of application scenarios, the long lifetime of tags makes this technology is highly suitable for development. RFID solutions have a decreased operating spectrum (up to 10 m) inside of boundaries to object to detection and quantification in relatively small areas[7][8]. The consumers go through a once-in-a-time registration process when one's personal information has been questioned to ever be filled out and an account generated with them this account does have information about them and money they can recharge at local kiosks [9]. In this technique, the customers were also guided to an unfilled parking space using video displays entrance of the parking structure. With empty and occupied slots, these displays show a visual representation of the parking lot, which are green and red respectively [10] [11]. The customer has furnished with such a tag that he gets because once he registers, this tag has been connected with his prepaid account as well as contains confidential information, and this tag uses an RFID system and has been mounted on the surface of the windshield of the customer. A parking fee has been instantly deducted from the user's account [12] based on the period consumed inside the parking area. RFID has been used to register every other customer for once, as well as an RFID tag has been attached to his vehicle instead of repetitively creating a token. There is no wait time in the RFID system, which would be distinctive to him (as if Aadhar number). These same consumers transfer via the entrance easily and park everyone vehicles [13]. When a vehicle has been opted to stay, the IR sensor releases the database and moves via the entrance door to see a big display with stay living parking spaces. It is noticed that a large number of people waste fuel for free parking space. Utilizing IOT, transmit messages on the free or used slot to the website [14] [15].

RFID - IoT- Smart Parking: The Connecting Link

IoT is based on decentralized integrations of network devices, identifications, sensors, and other smart technologies interconnected to reduce manual work and increment automation. IoT applications are grouped into several domains ranging from an essential internet

JETIR.ORG ISSN: 2349-5162 | ESTD Year : 2014 | Monthly Issue

JOURNAL OF EMERGING TECHNOLOGIES AND INNOVATIVE RESEARCH (JETIR)

An International Scholarly Open Access, Peer-reviewed, Refereed Journal

A Clock Gating Technique Using Different Techniques

[1]P.Rajesh,[2] K.Hemaltha, [3]R.Chandrika[4]C.Mallikarjuna Reddy[5]Kalyani Anil Kumar

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati,A.P. India.

[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Abstract: **In the design of ICs, power dissipation is an important parameter that indicates the need of Low Power circuits in modern VLSI design. In IC chip design various techniques invented for low power design. In several techniques Clock gating is one of widely used technique, which provides very effective solutions for reduction of dynamic power dissipation. Many researchers are modified clock gating techniques in many different ways. This paper included comparative analysis of power in Clock Divider circuit using different clock gating techniques. The look ahead clock gating based on auto gated flip flops method combines the previously three methods. Several techniques to reduce the power have been developed of which clock gating is predominant. This look ahead clock gating computes the clock enabling signals of each flip flop one cycle ahead of time, based on the present cycle data of those flip flops on which it depends. It avoids the tight timing constraints of auto gated and data driven by allotting a full clock cycle for the computation of the enabling signals and their propogation. A look ahead clock gating model is presented which is based on the auto gated flip flop. The comparison between the look ahead, data driven clock gating is done. This clock gating is very useful for reducing the power consumed by digital systems. Power consumption plays an important role in any integrated circuit and is listed as one of the top three challenges in international technology roadmap for semiconductor.**

Index Terms: **Clock Gating, Flip-flop, Latch, Look ahead, Gate etc.**

1. INTRODUCTION

This project introduces the technique called "A look ahead clock gating based on auto gated flip flop". Previously three gating methods are known. First is synthesis based, deriving clock enabling signals based on the logic of the underlying system. It leaves the majority of the clock pulses driving the flip flops redundant. A data driven method stops most of those and yields higher power savings, but its implementation is complex and application dependent. A third method called auto gated flip flops is simple but yields small power savings. This project presents a look ahead clock gating based on auto gated flip flops[1]. Look ahead clock gating computes the clock enabling signals of each flip flop one cycle ahead of time, based on the present cycle data of those flip flops on which it depends. It avoids the tight timing constraints of auto gated flip flop and data driven clock gating by allotting a full clock cycle for the computation of the enabling signals. The clock gating which enables the clock signals from the clock distribution networks. This technique activates the clock which is needed for the operation of the circuit. The unnecessary clock signals are not activated during the clock gating this saves the power consumption of the circuit. In the earlier period, the VLSI designers were more bent towards the performance and area of the circuits Reliability and cost also gained core importance whereas power consumption was a peripheral consideration. In recent years however a power being given equal importance in comparison to area and speed. As technology scales down, short circuit and leakage power becomes comparable to dynamic power dissipation. Consequently, the identification and modelling of different leakage and switching components is very important for the estimation and reduction of power consumption especially for high speed and low power applications. Clock gating is predominant to reduce the power consumption. With clock gating, the clock signals are ANDed with explicitly predefined enabling signals, clock gating is employed at all levels, system architecture, block design, logic design and gates. Previously, three gating methods are known, first is the synthesis based, deriving clock enabling signals based on the logic of the underlying system. It unfortunately leaves the majority of the clock pulses driving the flip flop redundant. A data driven method stops most of those and yields higher power savings, but its implementation is complex and application dependent. A third method called auto gated flip flop is simple but yields relatively small power savings. Synthesis based clock gating is the most widely used method by EDA tools. Clock enabling signals are very well understood [1] the system level and thus can effectively be defined and capture the periods where functional blocks and modules do not need to be clocked. Those are later being automatically synthesized into clock enabling signals are manually added for every flip flop as a

IMAGE ENCRYPTION AND DECRYPTION USING REVERSIBLE LOGIC GATES

[1]P.Vineela, [2] K.Himabindu, [3]J.Kiran kumar, [4]B.Lakshmi priya, [5]K.Murali

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

[2,3,4,5]B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P. India.

Emails: vinni21793@gmail.com, Kamasanihimabindu@gmail.com, jalagam4884@gmail.com, Bollinenipriya.7@gmail.com, muralireddy9100@gmail.com

Abstract: Reversible logic synthesis and testing is a fascinating research area as it is an important approach for low power design and quantum computing. Reversible computations have different applications such as quantum computing, nanotechnology, digital signal processing, bio-information etc. All these applications require a cryptography system to restrict the unauthorized access and thus maintain the confidentiality of data. High area and power requirements are some of the major problems of well secured cryptography algorithms. In this work, a Reversible Logic Gates Cryptography Design (RLGCD) is proposed to overcome these problems. RLGCD is used to design both encryption and decryption architectures. Linear Feedback Shift Register is used to generate the key for encryption and decryption processes. To further improve the security of data watermarking is done using Least Significant Bit (LSB) method.

1. INTRODUCTION

Cryptography is the process of protecting the information by converting it in to unreadable format and thus maintains the confidentiality of the data. This process involves the conversion of plain text into cipher text by the process called encryption and the process by which the original data that is the plain text is recovered back called decryption.

In data and telecommunications, cryptography is one of the most necessary part since the communication even take place over untrusted mediums where the data can be easily hacked out. A cryptography system not only demands high security but also low power consumption. The cryptography system implementation using reversible logic gates offers the best solution for this.

II. RELATED WORKS

A. FAULT RESILIENT LIGHT WEIGHT CRYPTOGRAPHY

Embedded systems having sensitive nodes such as RFID tags and nano-sensors necessitate the use of lightweight block ciphers. Error detection schemes for lightweight block ciphers are proposed in [5]. One of the fastest and most efficient block cipher in existence, XTEA (eXtended TEA) is used in this work. It uses simple addition, XOR, and shift functions, and has a very small code size, less memory requirement and less computational power. These proposed methods suitable for providing reliability but less accuracy in error rate is one of the demerit while using XTEA method.

B. SECURITY DESIGN OF DES USING REVERSIBLE LOGIC GATES

Security part design of the DES (Data Encryption Standard) using RLG [6] comprises of a reversible logic gate based two way shift register and four bit counter. Since RLG is used to implement the security part of DES, this work has good data security and low power consumption. But a specific RLG design is not provided and performance evaluations were not carried out.

III. PROPOSED ALGORITHM

A. REVERSIBLE LOGIC GATES (RLGS)

RLGs are the circuits that having equal number of inputs and outputs with a unique one to one mapping relationship. Thus it is possible to recover the input pattern from the output pattern, so that there is no information loss during computation. For example let 110 is the pattern which is given as input to RLG. Then after completing the logic operation it produce 001 as output. If we apply this 001 as input and obtained 110 as output then it depicts the occurrence of a reversible operation.

Constraints for designing RLGs include

- RLGs do not allow fanout.
- Quantum cost should be minimum as possible.
- Optimize the design to make garbage outputs minimum.

AUTOMATED BILLING SMART TROLLEY

Vidyarani S[1], Sai Tharun S[2],Renusree O[3],Vamsi Krishna C[4] , Reddi Bhavya Sri K[5]
ECE Dept Assistant Professor[1]
[1]Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh
[2345]UG Students, Dept of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh

Abstract — **In this modern world, all people like to use products which is of high technology. People do not want to waste time and energy by using conventional systems. Rather they prefer advanced devices which is automated, smart, to finish their work soon. Smart trolley is one such advanced devices which is more flexible and a easy process to complete shopping without any delay. Customers in the store do not want to wait for long time to pay their bill. In the smart trolley the bill can be paid simultaneously without waiting in the counter. Once the shopping is over payment is done through online or offline based on the customer. This flexibility is not provided by the existing trolley. To overcome this, Smart trolley is preferred. The newly designed smart trolley consists of Arduino UNO, RFID reader and tag, Wi-Fi module. Apart from this payment feature, smart trolley allows the admin to view the stock details also. Each product's stock can be monitored and planned accordingly without any extra manual work.**

Keywords— Arduino Uno, Website development, Bill generation, php, html, mysql, Stock monitoring.

I INTRODUCTION

Only 8% of customers use existing smart trolley. Many customers don't use the available smart trolley because of its complexity in accessing, payment modes, membership cards. The complexity is because of the difficult options in the trolley. Many available smart trolleys allowonly online payment or payment through master cards which is not afforded by all customers [1]. Smart trolleys are not installed in many stores because of its cost. The cost is high because of the design that includes servo motor which also requires high maintenance [2]. Whereas in the new design it is overcome by using a IR sensor which reduces the maintenance, power consumption and the cost of the trolley also. The accessing options are also so simple that every customer can use it. It doesn't include any login option, or membership card. This trolley is proposed, so that difficulty in using existing smart trolley is reduced, additional options are included, many components are replaced from the existing one to decrease the cost of the smart trolley. The working is also simple that the customer can add products into the trolley by using the switch and it can be removed similarly. After the shopping is over bill can be generated by using the bill switch. Once the bill switch is pressed, the data is transferred, so that the customer can have a look at the entire bill and the total price based on the discount in the store. When the shopping is completed by the customer, the stock details get updated and displays the current balance stock to the admin So, the manual work to keep on monitor the stocks is not needed when the newly designed smart trolley is used in the store.

A. Literature Review

Paper [1] describes about the shopping trolley using microcontroller, GSM module, RFID Module, LCD display. It requires individual login ID to use the trolley. This also allows payment only through online using master cards or membership cards.

Paper [2] is about the shopping trolley using Raspberry Pi, RFID Module, DC motor to close the trolley. The presence of dc motor increases the maintenance cost, battery lifetime will also be less because motor requires high power.

Paper [3] describes about the cart consists of RFID reader and all product in the shop has its own tag. In this design, the trolley does not ensure whether the door is closed or not after the shopping is done, so there is a chance of adding products after the bill is generated.

Already existing smart trolley allows payment via online or through master cards which is not afforded by everyone. If the customer adds or removes any product after the bill is generated it will not be detected in the existing system. When existing smart trolley is used the stock details in the shop cannot be monitored.

II PROPOSED SMART TROLLEY SYSTEM

The advanced version of trolley which is very much flexible with improved features for the customers in all aspects is smart trolley system.

The proposed system is flexible to the customers as it allows them to pay via online as well as offline. All products in the shop is fixed with RFID tag. Our device consists of a RFID reader. When the products are added, the RFID reader reads the particular product's tag and displays in the screen. If any product is to be removed it can be done using the remove switch.

Once the bill is generated if any product is added or deleted will be alerted using a led. If the payment is done, it will be indicated so manual checking is not needed. Stock availability can be monitored by the admins if the shopping is done using trolley. Based on the offers at festival time, device will scan the product and calculate the price after discount, display the price in LED screen. It also allows the admin to monitor stock details so, it can be restored once the product gets over.

Design and Development of Arduino-Based Portable Air Quality Monitoring System

S.Vidyarani[1], CH.Chandrasekhar[2], PVSSP.Dinesh[3], B. Lakshmi kiran[4], D.Jayachandra[5]

[1]Assistant Professor, Dept. of ECE, Annamacharya Institute of technology and sciences, Tirupati

[2,3,4,5]UG students, Dept. of ECE, Annamacharya Institute of technology and sciences, Tirupati.

*ABSTRACT-***Air pollution can have a terrible impact on the environment and human health Because of the release of lethal gases by vehicular emissions, factories, and elevated amounts of inhalable particulate matter in the atmosphere. It leads to Harmful effects on ecosystems, human health, and climate changes. Therefore, monitoring pollutant levels in the air is required. In this paper, an Arduino microcontroller-based air quality monitoring system has been developed for measuring the various atmospheric parameters viz. carbon-monoxide, temperature, humidity, and methane using the respective sensors. The measurements were taken based on the parts per million (PPM) metrics and the data were collectedthrough the sensors-based LCD/serial monitor for analyzing the result. Both graphical and numerical formats of results can help the user to a betterunderstanding of the pollutant level in the air by which he/she can take necessary action.**

Keywords- Arduino UNO; Pollution; Toxicgases;Sensors; Pollution monitoring.

INTRODUCTION

Air is a necessary element in Human life that contain gases such as nitrogen (N_2), oxygen (O_2), carbon dioxide (CO_2), carbon monoxide (CO), andsome very rare elements [1]. Any changes in the natural composition of air can harm human health. Air Pollution is turned up as one of the major threats to modern civilization andthe fourth prime risk factor for premature deaths worldwide. This pollution had both obstructed economic development and caused human suffering. The main source of air pollution in all major cities is due to vehicles and the second major source remains the industries.

Vehicles cause environmental pollution which resulted in respiratory complications like asthma, lung cancer, skin rashes, stroke, and heart disease [2]. Due to this air quality degradation, city life has become a major cause of concern around the world. Air pollution is increasing due to several anthropogenic activities and its monitoring is of vital importance to mitigate certain measures to control in it.

A recent Indian study found that ~40% ofschoolchildren suffer from poor lung health out of2000 school-going children surveyed in the age group of 8-14 years across all parts of India [3]. Several cities across India are considered to be among the world's worst air-polluted cities.According to the World Health Organization (WHO), every year globally millions of death cases have been reported due to air pollution[4].

Here, the proposed system was developed usinghigh-accuracy commercially available sensors to measure specific pollutants and atmosphericparameters. Sensors are used for sensing the various air pollutants, temperature, and relative humidity. The data from all the sensors were read by an Arduino-based microcontroller unit and processed before being displayed on the local display unit.

LITERATURE REVIEW

Paper[1] A real-time ambient air quality monitoring wireless sensor network for schools in smart cities:- Published in: Smart Cities Conference (ISC2), 2015 IEEE First International ,Authors: H. Ali, J. K. Soe, Steven. R. Wel (School of Electrical Engineering & Computer Science, The University of Newcastle, Callaghan, NSW 2308, Australia) In this paper, a low-cost solar-powered air quality monitoring system based on ZigBee wireless network system technology is presented. The solar powered network sensor nodes can be deployed by schools to collect and report real-time data on carbon monoxide (CO), nitrogen dioxide (NO2), dust particles, temperature, and relative humidity.

Paper[2] A low-power real-time air quality monitoring system using LPWAN based on LoRa:- Published in: Solid-State and Integrated Circuit Technology (ICSICT), 2016 13th IEEE International Conference ,Authors: Sujuan Liu, Chuyu Xia, Zhenzhen Zhao (College of Electronic Information and Control Engineering, Beijing University of Technology, 100124, China) This paper presents a low-power real-time air quality monitoring system based on the LoRa Wireless Communication technology

SYSTEM SETUP

This system comprises both hardware and software. Arduino IDE Software is needed for the programming of each sensor that is interfaced to Arduino. Fig. 1 shows the simple block diagram ofthe monitoring system that was developed by the authors. The specification of each component is briefly mentioned below:

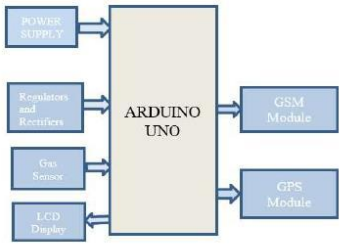


Fig 1:Block diagram of Air Quality Monitoring System

JES
Journal of Engineering Sciences

Vol 13, Issue 06, JUNE/2022

ISSN NO:0377-9254

Energy Meter with Smart Monitoring of Household Appliances Based on Internet of Things

T. Anuradha[1], S.Navya[2], M.Dileep Kumar[3], C.Anusha[4], S.Om Prakash[5]

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati.
[2,3,4,5]UG Students, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati.
anuradhatvg@gmail.com, sharabunavya@gmail.com, dileep6677kumar@gmail.com,
chamarthi1113anusha@gmail.com, omprakashsulam22@gmail.com

Abstract— Today Technology has changed across the world in a way human interact with the physical world. Internet of Things paved the way allowing us to insert technology into day today physical objects. In this an Energy Meter with Smart Monitoring of Home Appliances based on the Internet of Things is built. This proposes a system which eliminates manpower by self-regulating meter readings and Bill generation reducing flaws which are one of the major causes for Energy related corruption. The demand for transparency in the domain of Energy estimation has emerged as there is no verification facility. Arduino Uno is used as central controlling unit in this system. For Energy Meter, the ZMPT101B Voltage sensor and ACS712 Current sensor are interfaced with a Microcontroller. The readings of Voltage, Current, Consumed Power as number of units and Corresponding Prices are calculated and displayed over 16*2 LCD Display module. An Infrared based Flame sensor is used as a fire safety measure. Monitoring of home appliances is done by using 8 channel relay module to which loads are connected . All the readings obtained from Sensor is sent over the ESP8266 Wi-Fi module to Thing speak or Adafruit Cloud storage.

Keywords— ESP8266 WiFi-Module, Arduino, IoT, IFTTT, Thingspeak, Energy Meter

I. INTRODUCTION

Today, Technology is being implemented into everyday physical objects. With the advancement in it we are capable of teaching objects to respond to our presence, motion and other automatic physiological behavior. At present, there are many methods of energy metering. from recent works, there have been overall two types of metering systems, one is by counting the blinks of the LED present in the conventional meter and the other one is by measuring the actual voltage and current usage. This proposed system eliminates the human involvement in electricity maintenance. The Energy meter shows the amount of units consumed and transfers the data to both the consumer and to the Electrical Board.

II. SYSTEM ARCHITECTURE

IoT is capable of interfacing various sensors, devices people enabling a free-flowing connection between humans and machine. As a forward step in IoT devices, we propose an IoT based Energy meter with smart monitoring of home appliances. This system uses Arduino micro controller as the main controlling unit. The functions of this project are of two types i.e. an Energy meter with digital display and monitoring of home appliances using IoT. For Energy meter the microcontroller is interfaced with a voltage sensor (ZMPT101B) and a current sensor (ACS712). The values are noted and the units are measured with the corresponding values and thus price is calculated. As a fire safety measure, a flame sensor is being introduced with a relay. It is used in case of a short circuit or any mishap. The output obtained is shown on the 16*2 LCD module. The readings collected are sent to the cloud storage (Thingspeak) over Wi-fi, where it is recorded and analyzed in graphical form.

Monitoring of the home appliances is accomplished by interfacing the 8-channel relay module to Arduino. Loads are connected to the relay module and are operated. This proposed system is used to automatically measure energy consumption & calculates the bill with the help of IoT. This system eliminates manual meter reading This concept is essential for cost effective renewable Energy. In future many more advanced features can be incorporated on the device as of consisting of the web server by the Electricity authorities for storing the data, taking necessary steps against Electricity theft and also providing many more services in a convenient and faster way aided in increasing the user-friendly ability of the device. As of whole, the performance and working of the system are well monitored with proper significant output and also it aids in less power consumption with safety measures reduces flaws which are one of the major causes for Energy related corruption.

Journal of Interdisciplinary Cycle Research ISSN NO: 0022-1945

EMBEDDED IOT CAR PARKING AND BILLING SYSTEM

[1] K. Vijayalakshmi , [2]j.radhika , [3]Y.V.Pranayini, [4]S.Saleem, [5]B.Venkatesh,
[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati.
[2,3,4,5] B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati.
[12345]Email:vijayalakshmi.kakarla@gmail.com, radhikajessi6@gmail.com, saleemshaik12.1999@gmail.com, pranayini.y@gmail.com, venkateshyadav0300@gmail.com

Abstroct: In As of late, huge vehicles are going through trouble finding a parking area because no appropriate data is available on whether the leaving space is full or void. Altogether this can cause a clog, contamination, and fuel failure. Because of these conditions, there could likewise be trouble in controlling the stopping the board. By utilizing a microcontroller keen stopping framework (given IoT), stopping issues are regularly settled. The Web of things might be a new subject that assumes a pivotal part in our everyday lives. IoT decreases human work, exertion, time, and mistakes because of human carelessness. Subsequently, an Embedded IoT Parking System is proposed which is intended to shape it simpler for stopping clients to encourage data on the stockpile of unfilled and filled stopping spaces and can likewise book stopping openings utilizing electronic applications. There are numerous stages to execute a microcontroller-based Parking System i.e., prerequisites frameworks, prototyping advancement, prototyping assessment, composing, testing, and assessment framework. This method utilizes equipment like Arduino-Mega, Arduino-UNO, Wi-Fi module, LCD to show the stopping openings accessible and booking affirmation, infrared sensors which are utilized at each press stopping and tells the space accessibility,The programming language utilized is C to design Arduino and PHP which are utilized for the online interface while By Parking Application, it's relied upon to help to stop administration clients to ask data and discover void stopping openings through booking inside the application all together that it'll be more proficient as expected and stopping the board will be more controlled

Keywords - IoT (Internet of Things), Android application, LCD display, Arduino Uno, IR sensor, cloud server

1. Introduction:

As an adage says, "for what reason to control when drive", that is the point at which the excursion on wheels began and which has made the hard continuous issue to leave vehicles into leaving openings. In another city, in light of the fact that the invention of vehicles goes on the expansion and hence the gathering of vehicles has likewise expanded, however leaving accessibility has gotten clogged to leave N number of vehicles. Thus, individuals are thinking that it's a heavenly issue to appear to be the accessible space during top hours and merry occasions, which burns-through much energy and burn through important time which can be a genuine downside as of late. To trade the above issue, we'd wish to propose an effective stopping framework which could assist with diminishing grid-locks at significant areas where traffic surge is more. The Arduino-based savvy vehicle leaving framework will furnish programmed executives of parking garages with no mistake. This issue can't be settled effectively by adding parking spots or by making multi-story parking spots. this arrangement. thus, prompts the utilization of goliath places. All things have been considered. we'd wish to fortify our accessible stopping framework with a refined observing stopping framework. This task will assist with shaping sure the security of a vehicle, decrease debasement, labor and makes the entire leaving as a programmed framework which can be sans mistake and ought to diminish the hour of clients in leaving their vehicle. Additionally, the web application using web installment framework helps to pay the amount according to the duration of parking. A counter is used here to measure the duration of the vehicle parked inside the parking lot. These applications considers the past records and covers all the aspects related to it. On account of not appropriately kept up parking spots, people groups are compelled to leave their vehicle on the streets which end in the hefty clog additionally as a street blockage. Our mechanized leaving gives an easy-to-understand climate to leave a vehicle during a protected spot on the grounds that lone an authorized individual can leave their vehicle. As blockage on a street diminishes, it'll consequently decrease contamination created by vehicles in rush-hour gridlock

2. Literature survey:

Proposed a model to save the time, effort and obviously fuel using IOT while searching for parking. The system consists of hardware components like WI-FI module, infrared (IR) sensor, and Arduino UNO. The sensor's frequency of sensing is kept 2 seconds. When a car approaches, the Infrared detects the incoming car and signals. A cloud database is used for data management. It helps the user by providing the nearest vacant parking slot at the users set destination. The system comprises an IR, and Arduino board and Wi-Fi module for data transmission . The setup informed and guide to current vacant slot in the parking. The infrared transmitter and receiver detect the occupancy and non-occupancy of the parking slot. The transmitter is attached to the footpath besides the parking slot. The

ISSN NO:2347-6648

GAS LEAKAGE WITH AUTO VENTILATION AND SMART MANAGEMENT SYSTEM USING IOT

[1] K. Vijayalakshmi , [2]M. Nagathriveni , [3]M. Hima Bindu, [4]M. Meena, [5]M. Nandini,

[1]Assistant Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati,
B.Tech Student, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati.
Email:vijayalakshmi.kakarla49@gmail.com,nagathrivenimuddapolu@gmail.com,himabindhu9985@gmail.co
m, meenareddy76618@gmail.com, nandini.220400@gmail.com

Abstract: **In the evolving smart home architectures, the issue of gas spillage and fire is still remaining as a significant hindrance for designing a comprehensive, safe and sustainable kitchen model. On the other hand, security has also been significant challenge in this digital era. In urban areas, most of the kitchens are very small and it doesn't contain proper ventilation system. In such case, Spillage of gas increases the risk of fire accident, suffocation or a blast. To eradicate this challenge, smart management system viz. gas leakage detection and fire detection system should be developed. In this paper, Arduino UNO microcontroller was utilized to build a smart gas detection system with many usable sensors (MQ2, IR Fire Sensor) and actuators (air fan, buzzer). When gas spillage is recognized, the client will be intimated through SMS and at the same time they will receive notification via blynk application. The proposed system can detect fire, gas leakage and it also has the ability to take further steps and decrease gas concentration via auto air ventilation and extinguish fire with water. The proposed method will help to improve the safety and reduce the death toll and reduce the damages that occur to the surrounding environment.**

Keywords- Arduino; alarm notifications; gas leakage detection; fire detection; home security.

I. INTRODUCTION

Gas spillage and fire accidents in houses are causing various losses and property harms. For instance, the flammable gas leaks, which is significantly burnable, increase the danger of fire and can even instigate impact. These days, sensor based different project are broadly utilized. These system is used to send live updates about bothersome conditions when contract holders are far away from home. Every year lots of people died for fire that's because of gas leakage. So, most significant thing is to distinguish gas spillage and recognize fire. Each private home should have an alarm framework to remain protected from fire. The proposed point "IoT (Internet of Things) based smart gas management system" manages five significant issues, gas spillage location, fire discovery and auto ventilation, disturbing System (SMS, Notification by means of versatile application) and water siphoning framework. This framework utilizes the gas sensor, fire sensor, bell, and transfers with appended water valve, air fan and GSM module for correspondence dependent on Arduino microcontroller. The framework can alarm clients about home fires, gas spillage. It can play out some fitting activity as a reaction to undesirable circumstances to forestall loss of human existence and assets.

2. LITERATURE SURVEY

Gas Leak Detection and Localization System through Wireless Sensor Networks:

In this project we proposed a prototype of a Wireless Sensor Network (WSN) to monitor and locate gas leaks of a complex indoor environment. Specifically, a mobile node is moving inside a building to monitor any leakage of carbon dioxide (CO_2), supporting and displaying the level and the location of the leakage. Throughout the demonstration, the technological advantages of cognitive networking along with multichip routing are explored.

Gas Leakage Detection and Smart Alerting and Prediction Using IoT :

IoT is an expanding network of physical devices that are linked with different types of sensors and with the help of connectivity to the internet; they are able to exchange data. Through IoT, internet has now extended its roots to almost every possible thing present around us and is no more limited to our personal computers and mobile phones. Safety, the elementary concern of any project, has not been left untouched by IoT. Gas Leakages in open or closed areas can prove to be dangerous and lethal. The traditional Gas Leakage Detector Systems though have great precision, fail to acknowledge a few factors in the field of alerting the people about the leakage. Therefore we have used the IoT technology to make a Gas Leakage Detector having Smart Alerting techniques involving calling, sending text message and an email to the concerned authority and an ability to predict hazardous situation so that people could be made aware in advance by performing data analytics on sensor readings.

3.EXISTING METHOD

There are different models have already been designed that is related to oursystem.Individual models have their own advantages and disadvantages.

Design Implementation and Analysis of Different SRAM Cell Topologies

P. Praveen Kumar, Assistant Professor, ECE Department, AITS, Tirupati.
B. Bhargavi, B.Tech student, ECE Department, AITS, Tirupati.
B. Pravallika, B.Tech student, ECE Department, AITS, Tirupati.
M. Haritha, B.Tech student, ECE Department, AITS, Tirupati.
Tilak Diwakar, B.Tech student, ECE Department, AITS, Tirupati.

Abstract: In this paper, we plan a diverse kind of SRAM cells. This paper thinks about the presentation of five SRAM cell geographies, which incorporate the customary 6T, 7T, 8T, 9T, and the 10T SRAM cell executions. Specifically, the spillage flows, spillage force, and read conduct of each SRAM cells are analyzed. In 10T SRAM cell usage results, diminished spillage force, and spillage current by 36% and 64% separately, the real strength is expanded by 13% over regular 6T, 7T, 8T, and 9T SRAM cells. Subsequently, the 10T SRAM consistently expends the least spillage force and spillage current; improve read solidness when contrasted with the 6T, 7T, 8T, and 9T SRAM cells. The point of this paper is to diminish the spillage power, spillage current and improve the read conduct of the distinctive SRAM cell structures utilizing rhythm device at 45nm innovation while keeping the peruse and compose get to a time and the force as low as could reasonably be expected.

Keywords: SRAM, Topology, Leakage Control Transistors, decoder etc.

I. INTRODUCTION

Now a day's semiconductor memories SRAMs are widely used in computer systems, microprocessors, microcontrollers and system on chips (SoCs) based equipments. Memory contains 70 to 80 percent area of processors that means its take lots of space in the system. In other words we can say that its power consumption will be more and its leakage power dissipation will also be more. SRAM and DRAM holds the data but both the operating conditions are different. DRAM needs that data to be refreshing or retain the data after a particular time but SRAM does not have this issue. SRAM does not required to be refresh periodically. SRAM is interconvertible in nature that means it does not hold the information in terms of data when the power is cut off completely. To refresh the DRAM periodically it requires additional circuits which make the DRAM slower and bulky. One more complication with the DRAM is its power consumption is also high as compare to SRAM. So the DRAM is less desirable as compare to SRAM. Due to these above reasons SRAM is widely used in SoCs due to ease of usability and high speed. The memory sizes of the Cache are improved with improvements which play a significant part in the use of microchips and the system-on-chip. Intel device family reveals that the memory capacity for the cache on the computer in the processor is growing in clock speed, and the L3 Cache size on a device is the from 3 MB to 4 MB in the â Core-i3 Clarkdale (32 nm) to 8 MB in â Core- i5 Lynnfield (45 nm) â 12 MB in â Core- i7 Gulf town (32 nm) in the processor.

Similarly, the scale of Qualcomm Snapdragon S1 processor CPU L2 is increased from 256 KB to 384 KB for Snapdragon S2 to 512 KB for Snapdragon S3 to 1 MB with 1.5 GHZ for 28 nm of Snapdragon S4 technology. With each era, cache memory sizes are growing. The complexity of such a bigger, high- speed memory and low power usage has made it very challenging for me to create SRAM based memory. The writing procedure is not done in the current model due to power dissipation in traditional current mode SRAM mode, and only read the procedure in most of the architecture techniques. In this article, we suggest a current-mode technique that is used both for reading and writing. Data are inserted into the bit line in writing using a resistor with two passes, which is operated by an activated (WE) signal. The differential current is transferred when allowed to write data lines. This paper suggests a New 7T, which has one additional Meq transistor relative to the 6T SRAM conventions. The extra transistor is used to remove the cell data before any writing process. This functions as a standard SRAM cell for Meq off condition. The latest new existing SRAM mode is based on a 128x8 cell 0.6-um CMOS system, which uses just 30 percent of reading capacity.

II. LITARATURE SURVEY

The ROM falls into the grouping of non-volatile memories. This encodes data in the circuit topology, which contains transistors or roots them. The details cannot be changed, because this topology is hardwired; it needs to be interpreted. Unlocking the source of energy from the device will not inflict knowledge loss. The RAM acronym is used to describe read-write Random Access arrays. For any question, details may be retrieved from an arbitrary location. In a RAM, the knowledge is either put on

IIETA International Information and Engineering Technology Association
Advancing the World of Information and Engineering

Traitement du Signal
Vol. 39, No. 6, December, 2022, pp. 2229-2235
Journal homepage: http://iieta.org/journals/ts

Development of Medical Image Analytics by Deep Learning Model for Prediction and Classification of CT Image Diseases

Praveen Kumar Pachala[1*], Polaiah Bojja[2,3]

[1] Department of ECE, Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur 522302, A.P., India
[2] Koneru Lakshmaiah Education Foundation, Green Fields, Vaddeswaram, Guntur 522302, India
[3] Institute of Aeronautical Engineering, Hyderabad, Telangana 500043, India

Corresponding Author Email: praveenpachala@gmail.com

https://doi.org/10.18280/ts.390639

Received: 3 September 2022
Accepted: 10 December 2022

Keywords:
CNN, CT images, ResNet, computer vision, large cell carcinoma, squamous cell carcinoma

ABSTRACT

The CT images of Lung illnesses or diseases that damage the lungs and weaken the respiratory system. Lung cancer is one of the topmost causes of death in humans around the world. Humans have a better chance of surviving if they are detected early. The average survival rate of persons with lung cancer increases from 14 to 49 percent if the disease is detected early. While computed tomography (CT) is significantly more effective than X-ray, a complete diagnosis requires a combination of imaging techniques that complement each other. But, because there are multiple phases of cancer that develop into different types of tumors with varying sizes and risks, finding lung cancer does not predict the risk of cancer. A deep neural network is constructed and tested for detecting lung cancer CT images. This research work analyses different types of tumor sizes such as large cell carcinoma, normal, squamous cell carcinoma, and adenocarcinoma. Also, the lung tumors are detected and predicted with the help of computer vision methods such as Residual neural network (ResNet), Convolutional neural network (CNN). Finally, the results of all the methods are compared and various parameters were calculated. Thus, the proposed method (ResNet) gives an optimal solution on comparison with respect to all the parameters.

1. INTRODUCTION

Cancer is one of the deadliest diseases that leads to death. Approximately one-fourth of people will be diagnosed with cancer at some point during their lives [l]. The earlier the detection, the better the chance of survival. Once a year, there is a gradual increase in the number of cancer casualties. According to studies, cigarette smoking causes lung cancer in 85 percent of men and 75 percent of women [2].

An efficient hybrid evolutionary algorithm called GOADE for solving visual tracking problems. In the proposed hybrid algorithm, Grasshopper Optimization Algorithm (GOA) operates in refining the vector [3]. When compared to MRI and X-Ray readings, computerized Tomography reports are less noisy [4].

As a results, Many researchers have used machine learning models to detect and diagnose lung computed tomography (CT) images using various computer assisted detection (CAD) systems, such as convolutional neural networks (CNNs) [5], Which have demonstrated classification performance on medical images in recent years [6, 7].CNNs have shown exceptional performance in applications such as vision and pictures in the medical area in CAD systems to efficiently diagnose lung cancer from CT scans [8]. For classification, a CNN model is used [9]. Image classification, facial recognition, and natural language processing are just a few of the disciplines where two-dimensional (2D) CNN has been used with promising results [10]. The current CAD design necessitates the training of a large number of parameters, but parameter setup is difficult, thus the parameters must be tuned to improve classification accuracy [11]. The majority of patients present is in advanced stages because the index of suspicion for lung cancer is low. Unfortunately, it spreads early and causes few early symptoms.

2. LITERATURE REVIEW

2.1 Review stage

Lucky [12] proposed a system to detect tumor by radiology image with an Accuracy of 85%.

Bingulac and Faulhaber [13, 14] projected a respiratory cancer recognition strategy with the SVM classifier using fuzzy c & k-mean partition methodologies. By this model less than 93 percent accuracy is gained.

Doyle [15] proposed a novel method for lung cancer diagnosis with the inclusion of expert knowledge and proven pathology. In this method 86 percent precision is attained.

Juette and Zeffanella [16] proposed a novel method for recognition of lung tumor by using chest CT images. In this paper DenseNet is used for classification and feature extraction.

Williams [17] proposed a novel method for detection and classification of Brain Tumor using RCNN with two channel CNN. By this model less than 89 percent accuracy is gained.

Kawasaki [18] proposed a novel method to detect lung cancer that uses a Convolutional Neural Network ResNet-18, AlexNet, GoogLeNet, Marine predators algorithm used for optimal arrangement with an accuracy of 93.4%.

Original Article

A Compact Square and Hexagonal Antennas with Fractal DGS for Mobile Satellite Applications

Hirald Dwaraka Praveena[1], Katta Sudha[2], P. Geetha[3], I. Suneetha[4]

[1]Assistant Professor, Department of ECE, Sree Vidyanikethan Engineering College, Tirupati, A.P, India. E-mail: hdpraveena@gmail.com

[2]Assistant Professor, Department of ECE, Sree Vidyanikethan Engineering College, Tirupati, A.P, India. E-mail: sudhak.ece@gmail.com

[3]Professor, Department of ECE, Sree Vidyanikethan Engineering College, Tirupati, A.P, India. E-mail: mailpgeetha2013@gmail.com

[4]Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati, A.P, India. E-mail: iralasuneetha.aits@gmail.com

Abstract

A miniaturized Circularly Polarized Microstrip Patch Antenna with fractal Defected Ground Structure (DGS) is proposed. For the purpose of realizing Circularly Polarized radiation, two square notches and an asymmetric length of two rectangular slots that are perpendicular to one another are printed on square and hexagonal shaped patches, respectively. The antenna size is decreased and circular polarization is achieved by employing koch snowflake-shaped Defected Ground Structure. The proposed antenna is appropriate for use in India with mobile satellite communications. The suggested antennas resonate at 1.5GHz. Axial Ratio, VSWR, Radiation Efficiency, FBR (Front to Back Ratio), and Area of Patch are the metrics used to evaluate the antenna performance to that of the existing antenna. It is observed that the proposed structures are better in many aspects mentioned above. The antennas are simulated using HFSS v.2017.2 software.

Keywords: Square Patch, Koch snowflake Fractal, Defected Ground Structure (DGS) and Slow Wave Effect.

DOI: 10.47750/pnr.2022.13.04.130

INTRODUCTION

Patch antennas are good choice especially for satellite applications because of their good traits like low profile, small size and ease of fabrication. Also for satellite applications circularly polarized antennas are preferred because of antenna placement constraints and to overcome multi path constraints. The design andsimulation of square notch printed antenna with koch snowflake fractal defected ground structure is discussed in this paper. This antenna can be used for data acquisition, monitoring and control applications in L band. By using this antenna thecost to establish technology can be reduced to great extent [1].

By using DGS concept the size of the patch can be reduced and hence antenna miniaturization can be achieved [2]. Removing portion of the ground plane is called DGS, and different shapes can be used like dumbbell, annular ring, spiral or any other shape can be used for DGS. By introducing DGS phenomenon the electrical length can be increased so that the resonance frequency is decreased or in other terminology, for the given operating frequency, the size of the antenna is made smaller. In this paper fractal koch snowflake shape is used as DGS [3]. The term 'fractal' means having self-similarity property. Because of this self-similarity property electrically larger dimensions can be fit into smaller areas. If we use fractal shape as DGS maximum benefit of slow wave effect can be obtained.

RELATED WORKS

Nadir Hakem [4] designed a miniature stacked patch antenna with two frequencies for the IRNSS that works at 1.176GHz and 2.492GHz in the L and S bands. To obtain the required operating frequency, the patch has been chopped at its diagonal corners. To obtain dual frequency of operation, stacked patch technique has been employed. Proposed antenna includes two radiators, each of which controls a single operating frequency. The proposed antenna can work at two different frequencies: 1.176GHz and 2.492GHz, with a gain of 2.19dB and 5.26dB for each frequency. The proposed antenna was created with a commercial 3D simulator called Ansys HFSS.

Bhargav Pansuria [5] created a micro-strip patch antenna with a single band for the Indian Regional Navigational Satellite Systems (IRNSS) receiver. The IRNSS positioning and accuracy services send signals over the L5 (1.176GHz) and S (2.492GHz) bands. So, to meet the needs of IRNSS receiver modules, researchers present a single-band micro-strip patch antenna with a simpler design. The microstrip patch antenna is also fed by a coaxial feed mechanism, and many factors like return loss, VSWR, axial ratio, gain, and radiation pattern are explored.

In order to work with the GPS satellite system, Thanh Nghia Cao [6] created a fractal antenna with two frequencies of 0 GHz, 1.228 GHz, and 1.5745 GHz. Compact dimensions and dual frequency operation were made possible by using the Minkowski fractal island and the radiating element's

Original Article

A Miniature Circular Polarized Fractal based Antenna for Satellite Applications

Katta Sudha[1], Hirald Dwaraka Praveena[2], I. Suneetha[3], G. Reddy Hemantha[4]

[1]Assistant Professor, Department of ECE, Sree Vidyanikethan Engineering College, Tirupathi, Andhra Pradesh, India. E-mail: sudhak.ece@gmail.com

[2]Assistant Professor, Department of ECE, Sree Vidyanikethan Engineering College, Tirupathi, Andhra Pradesh, India.
E-mail: hdpraveena@gmail.com

[3]Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupathi, Andhra Pradesh, India.
E-mail: Iralasuneetha.aits@gmail.com

[4]Associate Professor, Department of ECE, Aditya College of Engineering, Madanapalle, Andhra Pradesh, India. E-mail: hemanthag75@gmail.com

Abstract

A compact circularly polarized fractal-based antenna for navigation application is proposed in this work. Due to its simple fabrication method and inexpensive price, microstrip antennas have emerged as the ideal option for antenna designs. By using fractal shapes, electrically larger dimensions can be accommodated into smaller physical areas, so that antenna miniaturization is achieved. The total size of the antenna is Also, the antenna offers circular polarization at two resonating frequency bands 1.176GHz and 2.492GHz.The antenna is useful for the navigational applications. Compared to the most of the previously reported multi band circularly polarized antenna structure, the proposed antenna is compact in size, and can be fabricated easily on the single-layer PCB. Various parameters of the antenna like return loss, VSWR, radiation pattern, axial ratio, etc., are obtained using HFSS software.

Keywords: HFSS software, Satellite Applications, VSWR.

DOI: 10.47750/pnr.2022.13.04.132

Introduction

In order to allow desired behaviour and create a favourable trade-off between performance and increased design complexity, antenna setup has traditionally depended on physical parameters like patch length and substrate thickness. Micro strip patch antennas have sparked considerable interest during the last 20 years. A dielectric substrate is placed between a patch and a ground plane in a printed form of antenna known as a microstrip antenna. Microstrip antenna technology is chosen in this article to design the antenna since it is the most popular in the area of antenna technology due to its economic viability and uses in a broad range of microwave systems. Microstrip antennas have a number of key benefits, including low fabrication costs, lightweight, low volume, and low-profile configurations that can be made conformal. These antennas can also be mounted on satellites, rockets, and missiles without requiring extensive modification [1-3], and arrays of them can be produced with ease. Because of increase in electrical length, the frequency of the antenna decreases which helps us to design antenna in low frequency applications like microwave frequency, navigation and satellite applications and this advantage motivates us to design our proposed fractal antenna.

Literature Review

Nadir Hakem [4] designed a miniature dual frequency stacked patch antenna for the IRNSS applications with an operating frequency of 1.176GHz and 2.492GHz in the L and S bands. To obtain the required operating frequency, the patch has been chopped at its diagonal corners. A 50 Ω coaxial cable has been utilized to excite the antenna, and two layers of Rogers TMM 10 with a thickness of 3.81mm have been employed as the substrate material. To obtain dual frequency of operation, stacked patch technique has been employed. Proposed antenna includes two radiators, each of which controls a single operating frequency. The Proposed antenna is having dual frequency of operation at the frequencies of 1.176GHz and 2.492GHz with a gain of 2.19dB and 5.26dB respectively. The proposed antenna was created using the 3D simulator Ansys HFSS.

Bhargav Pansuria [5] developed a micro-strip patch antenna for Indian regional navigational satellite systems (IRNSS) receiver. Signals from the IRNSS positioning and accuracy services utilise the L5 (1.176GHz) and S (2.492GHz) bands As a result, a single band micro-strip patch antenna with a simplified design is proposed and simulated in accordance with the requirements of IRNSS receiver modules. Additionally, the coaxial feed mechanism is used to feed the micro-strip patch antenna, and several aspects such as return loss, VSWR, axial ratio, gain, and radiation pattern are

Original Article

Chronic Disease Prediction through Supervised Learning Techniques

Kasarapu Ramani[1], Irala Suneetha[2], Nainaru Pushpalatha[3], P. Harish[4], P. Yugandhar[5]

[1]Professor, Department of Information Technology, Sree Vidyanikethan Engineering College, Mohan Babu University, Tirupati, India.
E-mail: ramanidileep@yahoo.com

[2]Professor, Department of Electronics and Communication Engineering, Annamacharya Institute of Technology and Science, Tirupati, India.
E-mail: iralasuneetha.aits@gmail.com

[3]Assoc Professor, Department of Electronics and Communication Engineering, Annamacharya Institute of Technology and Science, Tirupati, India.
E-mail: pushpalatha825@gmail.com

[4]Associate Professor, Department of Electronics and Communication Engineering, Annamacharya Institute of Technology and Science, Tirupati, India.
E-mail: harishpasupulati@gmail.com

[5]Assistant Manager, Ernst & Young Pvt. Ltd, Bangalore. E-mail: yugandhar84@gmail.com

Abstract

About 10.5 percent of global adult population is living with diabetes. India has 77 million diabetic patients, it is the second highest in the world. Developing countries such as India face a huge burden of diabetes and its complications. Even children at the age of five are suffering from this disease. It is high time that people understand the gravity of the situation and make themselves fit to fight the disease than to suffer with it. If diabetes is not identified and treated in right time, it may lead to chronical health issues. In this paper a machine learning based prediction model is built to find the factors leading to complicated health issues such as cardio vascular disease. This model identifies the attributes that highly contribute to cardio vascular disease and compare various machine learning algorithms to predict cardio vascular disease among diabetic patients. It identifies the best algorithm from a set of supervised learning algorithms such as KNN, Decision Tree, Random Forest, Naïve Bayes and Gradient Boosting for prediction based on several performance metrics. The algorithms are compared based on the performance metrics such as accuracy, precision, recall, F1 score, time taken to train and time taken to test. We identified that Decision Tree with entropy as the split criterion achieved the highest accuracy.

Keywords: K-Nearest Neighbours, Decision Tree with Gini Index, Decision Tree with Entropy, Random Forest, Naïve Bayes and Gradient Boosting.

DOI: 10.47750/pnr.2022.13.04.134

Introduction

As per [1] about 530 millions of people in the age group of 20-79 are living with diabetes and it is projected to rise around 650 million by 2030. Two-Thirds of Urban people are living with diabetes [2]. Diabetes affects different organs of human body if is not diagnosed in early stage and not treated with proper medication, then it may lead to several life threatening diseases such as heart stroke, kidney damage and nerve damage etc.,. Therefore, an awareness on the factors leading to the occurrence of diabetes should be provided to the public. It is important to identify the chronic diseases that a patient may suffer after being diagnosed with diabetes. This work focuses on Machine learning models that identify the key attributes that highly effect the diabetic patients in acquiring chronic diseases. This paper aims at developing machine learning models that help in predicting chronic diseases due to diabetes. It aims at predicting the heart disease of a diabetic patient that highly affect the person to suffer from heart disease after being diagnosed of diabetes.

Related Work

In[3], the authors used supervised learning techniques such as Random Forest (RF), Decision Tree (DT), and Logistic Regression (LR) to predict cardiac illness on UCI Cleveland database of heart disease patients. The findings show that logistic regression achieves the best accuracy score. In this only three algorithm's performance is compared and also used for Cardiovascular Disease but not on exclusively on diabetic patients. In[4] the ML algorithms like ANN, SVM, LASSO, and Ensemble learning are used for diagnosis of diabetic and Heart disease. But the dataset used is binary class labeled and does not speak of risk of cardio vascular disease among diabetic people. In[6] the authors used Naive Bayes (NB) Machine Learning technique for predicting diabetes. The Bayesian algorithm considers the attributes are independent of each other, but many correlated attributes may result in diabetes. Hence, this technique may not be the

Original Article

Efficient Multi-Object Identification and Guiding System for Visually Impaired

Kasarapu Ramani[1], Irala Suneetha[2], Nainaru Pushpalatha[3], P. Harish[4], P. Yugandhar[5]
[1]Professor, Dept. of Information Technology, Sree Vidyanikethan Engineering College, Mohan Babu University, Tirupati, India.
E-mail: ramanidileep@yahoo.com
[2]Professor, Dept. of Electronics and Communication Engineering, Annamacharya Institute of Technology and Science, Tirupati, India.
E-mail: iralasuneetha.aits@gmail.com
[3]Assoc Professor, Dept. of Electronics and Communication Engineering, Annamacharya Institute of Technology and Science, Tirupati, India.
E-mail: pushpalatha825@gmail.com
[4]Associate Professor, Dept. of Electronics and Communication Engineering, Annamacharya Institute of Technology and Science, Tirupati, India.
E-mail: harishpasupulati@gmail.com
[5]Asst. Manager, Ernst & Young Pvt. Ltd, Bangalore. E-mail: yugandhar84@gmail.com

Abstract

Blind or visually impaired people can experience the surroundings through sound. Navigation based on audio is much helpful. Based on this principle a prototype with deep learning techniques is developed. Sensor based IoT system finds the presence of the objects and recognition is done through CSPDarknet-53 along with SPP and PANet for feature extraction and fusion. In addition to this it provides audio output in multilingual language. The system is designed to provide good accuracy and low latency in recognizing the objects and audio output in local language. Apart from this, it also provides the distance of the object from the user. The system is designed to recognize even a moving object with good accuracy.

Keywords: Raspberry Pi, Pi Camera, Ultrasonic Sensors, Feature Extraction, CSPDarknet-53, SPP and PANet.

DOI: 10.47750/pnr.2022.13.04.139

INTRODUCTION

Visual Impairment is disabling autonomous mobility of an individual. It is found that 285 million in worldwide and 20 million in India are visually impaired. No single existing techniques have all features such as recognizing indoor and outdoor objects, moving objects, distance between object and user, finding multi objects simultaneously, portability, less latency, and low cost. This paper presents a prototype having all the above mentioned features. In addition to this it also guides the visually impaired to navigate independently with audio in local language of their convenience.

IMPLEMENTATION

This section gives a detailed description of implementation of Object recognition and Navigation System of that is proposed in this paper.

1. Components

A brief overview of various components used to build the proposed prototype is given as follows:

Original Article

Medication Alarm: A Proficient IoT-Enabled Medication Alarm for Age Old People to the Betterment of their Medication Practice

C. Silpa[1], Dr.I. Suneetha[2], Dr.G. Reddy Hemantha[3], Ram Prakash Reddy Arava[4], Y. Bhumika[5]
[1]Assistant Professor, School of Computing, Mohan Babu University, Tirupati. E-mail: silpa.c8@gmail.com
[2]Professor, Department of ECE, Annamacharya Institute of Technology and Sciences, Tirupati.
[3]Associate Professor, Department of ECE, Aditya College of Engineering, Madanapalle.
[4]Assistant Professor, Department of CSE, K.S.R.M College of Engineering, Kadapa.
[5]Deparment of IT, Sree Vidyanikethan Engineering College, Tirupati.

Abstract

Medicine is the science and practice of patient care. Taking the medicine on time, as prescribed, is important to ensure that your body has the right amount of medication at all times. The proposed system contains an IoT-enabled medication alarm and provides timely warnings to patients about their medication duration. It is an important factor in treating an older person who often takes multiple medications to treat a variety of conditions. Overdose or improper dosing can cause medical problems. Medication management includes everything that reminds patients to take the medicine in the prescribed container. The proposed model is very helpful for patients who forget to take their medication on a regular basis. It informs the patient to take medication in a timely manner by providing sound and visual warning. The use of this model is based on a co-design approach that allows IoT-related hardware, as well as software for designing a web-based alarm system and other system information that will be designed and simultaneously sending a notification to a registered mobile number. It is a system that allows medical caregivers or clients to decide when a pill should be taken, as well as service all times.

Keywords: Internet of Things, Web Application, Arduino UNO, Buzzer, LED.

DOI: 10.47750/pnr.2022.13.04.143

INTRODUCTION

The most important aspect of one's life is Health. Taking care of health is becoming a difficult task in present society. Modern life of the humans is being very occupied by their daily routines. This is leading to a very busy human life style and in this people are forgetting many important things. If a person is suffering from any disease or illness then it is important to take the medicine on the right time that is prescribed by the doctor. If the patient is at home, then any of family member can take care about the taking of the medicine or a care taker is required for tracking. This drags us into problem when we are away from home or if we don't have a care taker who can take the responsibility of intaking of the medicine. Noting the point that every time a family member or a beloved person can't stand with making us remember about the medicine timing and caring about taking of medicine we came up with the idea of 'MEDICATION ALARM' which can remember our medicine timing and remind us to take medicine in right time. There are many other Applications available with this feature that can remind the timing of our medicine but the problem is, when we are dealing with a person who is not familiar with the smart phone or who don't have a mobile. This model adds advantages as it does not require constant usage of applications on smartphone. With the growth of IoT, any object can now be internally connected and it has been dubbed the next technological revolution. This is mostly employed in healthcare as it is very useful in improving the environment around us and help in tracking of health conditions. IOT refers to the use of sensors and networks connecting the computers to the Internet. It is also cost friendly and does not require much effort. This model is also helpful for the amnesiac patients and the youngsters as it produces sounds and visual effects at appropriate timings.

RELATED WORKS

[1] Shawn, Wei and Sumathi discusses in detail about the IOT- Based smart medicine Reminder Device that is designed for the elderly based. This is designed to solve the issues faced by the elders and aged persons. The paper explains the important key roles of the device and how the IOT based smart medicine reminder is solving the problems faced by the elderly. This paper has also explained about the similar devices and their drawbacks so the better implementation of the idea can take place. Lastly, the paper concludes by mentioning the challenges identified, drawbacks, recommendations, and further studies.

[2] Othman and Ong explains that the medication misuse

A ES

ISSN: 2096-3246
Volume 54, Issue 08, October, 2022

Design of Graphene Nanoribbon FET using Quantumwise ATK

P G Mamatha[1*], N. Geetha Rani[2], K. Mahesh[3], I. Suneetha[4], G. Vasanthi[3], G. Rakesh Kumar[5]

Sree Vidyanikethan Engineering College, Tirupati, India. 517102[1]
Ravindra College of Engineering for Women, Kurnool, India. 518002[2]
Dr. K. V. Subba Reddy Institute of Technology, Kurnool, India. 518218[3]
Annamacharya Institute of Technology and Sciences, Tirupati, India. 517520[4]
G. Pullaiah College of Engineering and Technology, Kurnool, India. 518002[5]

Corresponding Author: 1*

Keywords:
Graphene, SB-GNRFET, D-GNRFET, ON&OFF state currents, I-V curves and transconductance.

ABSTRACT

Recently, graphene nanoribbon field effect transistors (GNRFETs) are considered as promising contender in nano-electronic industry because of its extraordinary properties such as large mobility, high strength, and optical properties. In this paper, Schottky barrier GNRFET (SB-GNRFET) and doped GNRFET (D-GNRFET) are proposed to investigate their performance in terms of ON and OFF state currents, voltage-current (I-V) curves and transconductance. The presented devices are designed and implemented using the Synopsis based Quantumwise ATK tool to obtain the simulation results. It is observed that the D-GNRFET show high performance over the SB-GNRFET because of the doping concentrations. The simulation results of the proposed devices are obtained by the non-equilibrium Green's function and the Poisson's condition solver is utilized to evaluate the electrostatic potential.

1. INTRODUCTION

In traditional days, Moore's law fulfilled over decades depending on shrinking the Si based electronic devices. However, shrinking the MOSFETs have encountered various challenges and fundamental issues such as short-channel-effects, fluctuation in parameters of technically identical FETs because of matter discreteness and deteriorating issues [1], [2]. To avoid the issues, the ITRS has introduced the alternate devices such as quantum-dot cellular automata [3], single electron transistors (SETs) [4], Fin-FETs [5], carbon nanotube FETs (CNTFETs) [6] and graphene nanoribbon FETs (GNRFETs) [7], respectively. Among them, GNRFET is optimistic because of its wonderful physical, electrical and thermal properties.

Graphene is single sheet of graphite looks like honeycomb grid of carbon particles has interested the researchers due to its astounding properties such as large mobility, strength, conductivity, elasticity and optical properties [8], [9]. Graphene have created wonders in electronic industry because of its large ballistic transport and still moving ahead at faster pace. Although having the wonderful properties, the graphene is still not suitable to utilize in FETs due to lower ON/OFF state currents (I_{on}/I_{off}) because of zero

PREDICTION AND QUALITY ANALYSIS OF RICE USING ANN CLASSIFIER

[1]Dr. M. Prabha, [2] Dr. R. Senthamil Selvan
[1] Assistant Professor, Department of Electronics and Communication Engineering, St.Joseph College of Engineering, Sriperumbudur, Chennai.
[2]Associate Professor, Department of Electronics and Communication Engineering, Sri Venkatesa Perumal College of Engineering and Technology, Puttur, Andhra Pradesh.
E-mail:*prabha110292@gmail.com,senthamilselvan87@gmail.com

ABSTRACT

There are many foods in the form of grains in the food industry. Rice is a particularly important crop because it is a staple food. Since mislabeling rice grain varieties is a problem, it is desirable to be able to recognize and identify specific characteristics. In this study, the digital imaging approach was designed to investigate different types of traits to identify different types of rice. We introduce digital image recognition as an effective method for non-contact extraction of rice grain properties and present an automated system that can be used to identify and classify rice grain types. Images of rice are acquired using a camera. Image preprocessing, segmentation, and feature extraction techniques are checks performed on acquired images. Morphological features extracted from the images are fed into a neural network pattern recognition tool. This experiment was proposed to classify and identify specific rice samples based on their morphological features.

Keywords: *Segmentation, Feature Extraction, ANN Classifier.*
DOINumber:10.14704/nq.2022.20.10.NQ55856 **NeuroQuantology 2022; 20(10): 8736-8744**

I.INTRODUCTION

Rice is a significant farming item around the world. Absolute yearly creation is countless tons. Various sorts of rice grains have somewhat various sizes, tones, shapes and surfaces. Mislabeling of assortments is a significant issue in the food business. Others, including the International Rice Research Institute (IRRI) and the British Retail Consortium (BRC), banter the significance of rice for purchasers. These associations set guidelines and guidelines for rice grain assortments [3, 5]. These measures additionally give unique status to specific rice assortments, for example, basmati, because of their high market esteem. A few actual qualities, for example, least normal level and viewpoint proportion are obviously determined in the norm.

Widespread:

The expression "advanced imaging" alludes to the handling of two-layered pictures by computerized PCs. In a more extensive setting, this implies computerized handling of two-layered information. A computerized portrayal is a bunch of genuine or complex numbers addressed by a limited number of pieces. The picture introduced as a

USING DEEP CONVOLUTIONAL NEURALNETWORK FORPLANT LEAF DISEASEDETECTION

Jolly Masih, Associate Professor, School of Retail Management, Symbiosis University of Applied Sciences, Indore (MP), jolly.iabm@gmail.com

Rajkumar Rajesekaran, Professor, School of Computer Science and Engineering, Vellore Institute of Technolgy, Vellore

Abhijit Bhagwat, Associate Professor, School of Retail Management, Symbiosis University of Applied Sciences, Indore (MP)

Kapil Rokade, Director, School of Retail Management, Symbiosis University of Applied Sciences, Indore (MP)

Dr R.SenthamilSelvan, Associate Professor, Department of Electronics and communication Engineering,Sri Venkatesa Perumal College of Engineering and Technology, Puttur, Andhra Pradesh, senthamilselvan87@gmail.com

Abstract

Agriculture plays an important role in economic growth of any country. The poor and inappropriate plant disease identification techniques might lead to heavy crop losses impacting national nutrition and health security. Most of the farmers from developing countries such as India, use laborious and time taking traditional methods for early disease identification. Use of machine learning techniques such as Convolutional Neural Network (CNN) are helpful in early-stage leaf disease detection and classifications. Such techniques can be easily used by Indian farmers to save their precious crop from harmful insect, pests and disease. Machine learning (ML), plays an important role in identification and cure of common and rare plant diseases. Use of machine learning techniques is helpful in early-stage leaf disease detection and classifications. ML based plant disease identification algorithms enable farmers to identify plant diseases on time and to provide proper cure against the diseases. India is among the largest producer of fresh mangoes. The mango called Alphonso is one of world's most popular fruit. This study investigates the role of ML and CNN in

EMPOWER IDENTITY-BASED INTEGRITY AUDITING AND INFORMATION DISTRIBUTION WITH CONFIDENTIAL DATA DEFEAT FOR SAFETY CLOUD STORAGE

[1]Dr.G.R.Anil, [2]Dr.D.Nagaraju, [3]Dr.Kande Srinivas,[4] Mrs.R.Bhavani ,[5]Sai Charan Kalikota,[6]Dr.R.SenthamilSelvan
[1]Assistant Professor, Department of Computer Science and Engineering, Vardhaman College of Engineering, Hyderabad.
[2]Professor, Department of Computer Science and Engineering, Sri Venkatesa Perumal College of Engineering and Technology, Puttur, Andhra Pradesh.
[3]Associate Professor, Department of Computer Science and Engineering, Balaji Institute of Technology and Science, Warangal, Telangana.
[4]Assistant Professor, Department of Information Technology, St Joseph College of Engineering, Sriperumbudur, Chennai.
[5]Student, Department of Computer Science and Engineering, Vardhaman College of Engineering, Hyderabad.
[6]Associate Professor, Department of Electronics and Communication Engineering, Sri Venkatesa Perumal College of Engineering and Technology, Puttur, Andhra Pradesh.
Email:*anilgrcse@gmail.com,[2]raj2dasari@gmail.com,[3]sri.kande3697@gmail.com,[4]bhavaniramamurthi@gmail.com, [5]saicharan.kalikota@gmail.com,[6]senthamilselvan87@gmail.com

ABSTRACT

Users can use cloud storage services to remotely store their data and enable data sharing with others. Remote data integrity verification is advised in order to guarantee the accuracy of data saved in the cloud. Some prominent cloud storage platforms, like the electronic medical record system, may have files with sensitive data on them. Confidential information shouldn't be made available to others while sharing a cloud file. The entire shared file can be encrypted to protect sensitive information, but doing so prohibits others from accessing it. It is still unknown how sensitive data sharing with distant data integrity checks will be carried out. We recommend a remote data integrity verification method that implements the sharing of sensitive data hidden in this study to address this issue. This method uses a cleaner to make data block signatures valid for the file being processed while cleaning data blocks that correspond to sensitive data in the file. In the integrity check phase, these signatures are used to verify the correctness of the cleaned file. As a result, our method allows you to share and access a file stored in the cloud while sensitive data is masked, while you can efficiently perform remote data integrity checks.

Keywords: *Cloud storage, data integrity auditing, data sharing, concealment of sensitive information*

DOINumber:10.14704/nq.2022.20.10.NQ55857 **NeuroQuantology 2022; 20(10): 8745-8760**

LabVIEW-based performance improvement of servo vacuum booster using programmable logic control

M. Revathi, Navaz Kader and P. Ramu

Published Online: July 16, 2021 • pp 285-295 • https://doi.org/10.1504/IJVAS.2020.116450

Abstract

The issue of safety is very paramount in any automotive system, especially in automotive braking systems. Nowadays this safety is being somewhat overlooked as the efficient testing is not being performed on the braking systems. Nowadays it is one of the challenging tasks and keeps interest among researchers. In recent days, the researchers focused on designing the braking system which is dependent on servo vacuum booster. In this paper, we intend to aid a model to monitor the servo vacuum booster performance and also to improve the performance of the system. The virtual environment LabVIEW is the tool used to calibrate the system under test. The input stroke which is the replicant of the pedalling motion will be given through the servo motor at the rate required which is helpful to control the Programmable Logic Control (PLC). The parameters under measurement such as performance, jump in and threshold which are required for efficient braking system can be set by PLC programming in RS Logix 5000 software. Meeting the requirements while testing the servo vacuum booster will be considered as effective with no flaws and can be further processed.

Keywords

auto-braking system, LabVIEW, programmable logic controller

Data Prediction for the future forecasting in Covid-19 using Supervised ML Models

D Padmapriya, Dr. K. Venkataramana, S. Venkata Lakshmi

Abstract

Machine learning (ML) based forecasting mechanisms have proved their significance to anticipate in preoperative outcomes to improve the decision making on the future course of actions. The ML models have long been used in many application domains which needed the identification and prioritization of adverse factors for a threat. Several prediction methods are being popularly used to handle forecasting problems. This study demonstrates the capability of ML models to forecast the number of upcoming patients affected by COVID-19 which is presently considered as a potential threat to mankind. In particular, four standard forecasting models, such as linear regression (LR), least absolute shrinkage and selection operator (LASSO), support vector machine (SVM), and exponential smoothing (ES) have been used in this study to forecast the threatening factors of COVID-19. Three types of predictions are made by each of the models, such as the number of newly infected cases, the number of deaths, and the number of recoveries in the next 10 days. The results produced by the study proves it a promising mechanism to use these methods for the current scenario of the COVID-19 pandemic. The results prove that the ES performs best among all the used models followed by LR and LASSO which performs well in forecasting the new confirmed cases, death rate as well as recovery rate, while SVM performs poorly in all the prediction scenarios given the available dataset.

Medicon Microbiology
Volume 1 Issue 2 March 2022
Review Article

Heart Disease Prediction and Detection Using Association Rule Mining Techniques

T Sreenivasula Reddy[1]*, R Sathya[2] and Mallikharjuna Rao Nuka[3]

[1]*Department of Computer Science and Engineering from Annamalai University, Annamalai Nagar, Tamil Nadu, India*

[2]*Department of IT, Annamalai University, Chidambaram, India*

[3]*Department of MCA, Annamacharya Institute of Technology & Sciences (Autonomous), Newboyanapalli, Rajampet, Kadapa District, Andhra Pradesh, India*

***Corresponding Author:** T Sreenivasula Reddy, Department of Computer Science and Engineering from Annamalai University, Annamalai Nagar, Tamil Nadu, India.

Received: February 15, 2022; **Published:** March 07, 2022

Abstract

Data science mining methods are utilized in the field of medication for different purposes. Mining affiliation rule is one of the intriguing points in information mining which is utilized to produce continuous itemsets. It was first proposed for market bushel examination. Analysts proposed varieties in methods to create incessant itemsets. Creating huge number of incessant itemsets is a tedious cycle. In this paper, the creators contrived a strategy to anticipate the danger level of the patients having coronary illness through incessant itemsets. The dataset of different coronary illness patients is utilized for this exploration work. The information mining strategies-based frameworks could vitally affect the workers' way of life to anticipate heart sicknesses. There are numerous logical papers, which utilize the strategies of information mining to anticipate heart infections. Nonetheless, restricted logical papers have tended to the four cross-approval methods of dividing the informational index that assumes a significant part in choosing the best procedure for foreseeing coronary illness. Pick the ideal blend between the cross-approval methods and the information mining, order strategies that can upgrade the exhibition of the forecast models. This paper means to apply the four-cross-approval methods (holdout, k-overlay cross approval, separated k overlap cross-approval, and rehashed irregular) with the proposed techniques Extended Support Vector Machine and Extended KNN to work on the precision of coronary illness expectation and select the best forecast models. It investigates these procedures on a little and huge dataset gathered from various information sources like Kaggle and the UCI AI archive. The assessment measurements like exactness, accuracy, review, and F-measure were utilized to quantify the presentation of forecast models. Experimentation is performed on two datasets, and the outcomes show that when the dataset is epic (50000 records), the ideal mix that accomplishes the most noteworthy precision is holdout cross-approval with the neural organization with an exactness of 71.82%. Simultaneously, Repeated Random with Random Forest considers the ideal blend in a little dataset (303 records) with a precision of 89.01%. The best models will be prescribed to the doctors in business associations to help them anticipating coronary illness in workers into one of two classifications, cardiovascular and non-heart, at a beginning phase. Successive itemsets are produced dependent on the picked indications and least help esteem. The separated successive itemsets assist the clinical professional with settling on indicative choices and decide the danger level of patients at a beginning phase. The proposed strategy can be applied to any clinical dataset to anticipate the danger factors with hazard level of the patients dependent on picked factors. An exploratory outcome shows that the created technique distinguishes the danger level of patients effectively from continuous itemsets. The early recognition of heart illnesses in representatives will further develop efficiency in the business association.

Keywords: Data Mining; Heart Disease; Feature Selection; Cross-Validation Methods; Data Preprocessing; Classification Algorithms; Productivity; Business Organizations; Frequent Itemsets; Heart Disease Prediction; Association Rule Mining; Data Mining; Medical Data Mining; SVM; ESVM; ANN and EKNN

Original article | Published: 26 January 2022

Intuitionistic fuzzy rough sets and fruit fly algorithm for association rule mining

Sreenivasula Reddy T., R. Sathya & Mallikharjunarao Nuka

International Journal of System Assurance Engineering and Management **13**, 2029–2039 (2022)

Abstract

Association rule mining (ARM) is a data mining technique for identifying frequently occurring item groupings in transactional datasets. The frequent item recognition and ARM development are two critical processes in ARM. Association rules are generated using minimum support and confidence metrics. Numerous methods have been projected by scholars for the purpose of generating association rules. In general, a large number of datasets can be evaluated, necessitating an increased number of database searches. Additionally, data analysis may not require all of the characteristics of the input data. The suggested association rule mining project is conducted on seven biological data sets from the

Colossal pattern extraction using optimised length constraints based on differential evolutionary arithmetic optimisa

by T. Sreenivasula Reddy, R. Sathya, Mallikharjunarao Nuka

Abstract: Extracting large amounts of information and knowledge from a large database is a trivial task. Existing bulk item mi
are systematic and mathematically expensive and cannot be used for large-scale mining with interruptions. In this paper, the
(CPs) is solved by using optimised length constraints (LCs). First, we describe the minimum LC and maximum LC problems and
identifying the optimal threshold values. Here, the differential evolutionary arithmetic optimisation algorithm (DAOA) is used
constraints and extract the colossal patterns. The effectiveness of the proposed algorithm is proven by various experiments us

Keywords: *biological databases; colossal patterns; differential evolutionary arithmetic optimisation algorithm; DAOA; massive d*
DOI: 10.1504/IJICT.2022.10046129

HCP miner: an efficient heuristic-based clustering method for discovering colossal frequent patterns from high dimen

by T. Sreenivasula Reddy, R. Sathya, Mallikhanjuna Rao Nuka

Abstract: This paper presents an efficient heuristic-based clustering method for colossal frequent patterns discovery from the The HCP miner avoids exhaustive level-wise pattern tree traversal and quickly mines colossal patterns from the high dimensio approach constructs the sub-patterns using a lattice array and applies the binary clustering over the sub-patterns initially. Wh lattice array, it uses the support values. These sub-patterns are explored as conditional patterns by estimating core patterns u searching time during the database scan. Finally, colossal cluster is constructed from which colossal patterns are discovered. V high dimensional databases using different performance metrics. Our experiments shows that, the proposed HCP miner achie mining. In addition, these analysis of results reveals that the HCP miner algorithm outperforms with CoreFusion, colossal patt

Keywords: *data mining; big data; frequent pattern mining; FPM; high dimensional database; FIMI dataset; backtracking search.*

DOI: 10.1504/IJESMS.2022.10046794

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Consumer Satisfaction in Electrosteel Castings Ltd, Srikalahasthi.

[1]A. Bogadi, [2]Ch. Venkateshwarulu

[1]Student of MBA, Annamacharya college, Tirupati.
[2]Assistant Professor, Department of Business Administration, Annamacharya college, Tirupati.

ABSTRACT:

Organizations to increase the variety in their clients, their loyalty, sales, income and market proportion and subsequently extended survival, try to examine purchaser pleasure of their business. Customer satisfaction is a bodily concept this is due non-public assessment from information of product performance with the revel in obtained of the overall performance. Service satisfactory and client delight are conceptually intently. In control of carrier exceptional, pride is defined as emotional behaviour after buy. Customer delight moderates' effect of carrier great on behavioural intentions of clients. Quality of carrier is a vital detail in determining the fulfilment of an enterprise carrier. Factor "delight" depends on the provider provider's capacity to satisfy the norms and expectations of clients.

Keywords: Customer Satisfaction, Service Quality, Expectations, Performance.

1. Introduction:

Consumer pleasure makes a speciality of how people make decisions to spend them to be had assets like time, cash, effort consumption related objects. That consists of what they buy it, why they buy it, once they buy it, wherein they buy it, how regularly they buy it, how frequently they use it, how they compare it after the purchase and the impact of such opinions on future purchases, and the way they get rid of it.

Profits from client relationships are the fundamental thing of all groups. So, the simple goal of any business is income maximization thru consumer pleasure. But it's miles always tough to get patron satisfaction. A client might also country his want and desires and but may act in any other case. He might not be privy to his deeper motivations and may trade his thoughts at any degree.

In spite of such diversities among consumers there are numerous similarities among them. To discover these, the take a look at of target clients' desires Perceptions and shopping and buying pleasure may be useful because it will provide the statistics important for growing new merchandise, expenses channels of verbal exchange and different advertising elements.

The time period client pleasure refers to "the motion of clients within the market vicinity and the underlying reasons for the ones moves. Marketers anticipate that by means of knowledge what reasons consumers to buy particular goods and services they will be able to determine which products are needed inside the marketplace area, which are out of date, and how best to gift the goods to the patron".

Consumer delight offers with two distinctive categories of consumers. They are.

1. Household clients
2. Organizational clients

The family shoppers buy items and services for their personal private use, for using the family, or as a present for a friend. All these very last purchasers combine to make up the patron marketplace. The organizational consumer consists of income and non-profit organizations, government businesses and establishments, all of which purchase products, device and services to run their corporations, or for further manufacturing. End use intake is possibly the maximum pervasive of all kinds of buying purchaser buying satisfaction because it entails each person man or women.

Buying selection of purchaser: It is primarily based on inner and external influences; they may be as follows

Internal influences: Consumer conduct is encouraged by way of: demographics, psychographics (life-style), character, motivation, know-how, attitudes, ideals, and feelings

External impacts: Consumer behaviour is inspired by way of: lifestyle, sub-lifestyle, locality, royalty, ethnicity, family, social magnificence, reference corporations, life-style, and market blend elements.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Financial Performance by using Ratio Analysis of Amaraja Batteries Ltd

[1]T. Vineesha, [2]C.H. Venkateshwarlu

[1]MBA Student, Annamacharya Institute of Technology & Sciences, Tirupathi
[2]AssisstantProfessor, Annamacharya Institute of Technology & Sciences,Tirupati

ABSTRACT

Ratio analysis is one of the widely used tool of financial analysis. It means expressing one item in relation to another in numerical term. To have a better understanding and Details about the financial statement, the analysis has been done using ratio analysis. Every business undertaking needs finance for its smooth working. This study aims to analyze the liquidity, profitability, solvency position of the firm and its efficiency. The data is collected through secondary data. The study covers a period of five years i.e. from FY 2017-2018 TO FY 2021-2022. The study reveals that the financial performance is better. However, the shareholders fund against the outsider's fund should be increased. The company should take suitable measures to increase its profitability position. Adequate steps have to be taken to improve its cash position and to reduce the operating expenses.

INTRODUCTION:

RATIO ANALYSIS:

Ratio analysis is the process of determining and interpreting numerical relationships based on financial statements. A ratio is astatistical yardstick that provides a measure of the relationship between two variables or figures.This relationship can be expressed as a percentage or as a quotient. Ratios are simple to calculate and easy to understand.

RATIO:

The term's **"Ratio"** refers to the mathematical relationship between any two inter-related variables. In other words, it establishes relationship between two items expressed in quantitative form. Financial ratios are no different they form a basis of comparison between figures found on financial statements.

Ratios are used to the analysis of the two or more any type of related items and express them in arithmetic expression such as a to b; a: b(a is b); or as a simple fraction, integer and decimal.

Meaning of Ratio analysis :

Interpretation of financial statement with the het of ratio's is formed as ratio analysis A Ratio is a mathematical relationship between two (or) more value of the financial statements. The study and interpretation of a inter relaed transactions is know as ratio Aanalysis. Accounting ratio should be measured by the inter price all aspects.

For ratios to be useful and meaningful, they must be ;

- Calculated using reliable , accurate finanical information .
- Calculated consistently from period to period .
- Used in comparison to internal benchmarks and goals .
- Used in comparison to other companies in your industry

REVIEW OF LITERATURE:

Review of Literature refers to the collection of the results of the various researches

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Inventory Management in Southern Power Distribution Company of ASPDCL Ltd

[1]G. Pratap, [2]Ch. Venkateshwarulu

[1]Student of MBA, Annamacharya college, Tirupati.
[2]Assistant Professor, Department of Business Administration, Annamacharya college, Tirupati.

ABSTRACT:

In this paper title a study on inventory management in southern power distribution company of aspdcl Ltd, this aim to challenging problem areas in supply chain management. Companies need to have inventories in warehouse in order to fulfil customer demand, mean while inventories have holding costs,and this is frozen that can be lost. Company performance was determined based on inventory days and return on asset analysis and study of how product demand changes over time analysis. This research helps businesses stock the right amount of goods and project how much customers will want in the future.

Keywords:- abc classification, demand forecasting methods, inventory management, replenishment policies.

INTRODUCTION:-

Before the 1950's Finance was chiefly concerned with the issue of various types of securities, i.e., equities and different types of preference shares and debt instruments Finance also considered capital structure and liquidity, but each of these primarily from the view of an external analysis. Financial control consisted of various rules of thumb in respect of financial analysis ratio like the gearing ratio or current ratio.

In the 1950's the methodology of investment appraisal received increased attention, but the decade was especially marked by the publication of 2 important articles. 1st was by Markowitz in 1950 and concerned the theory of portfolio selection dealing with risky investment. This led to the later development of the capital Asset Pricing Model that deals with the pricing of risky asset and the relationship between risk and return.

The Second article was by Modigliani and Miller in 1958 and concerned firm valuation and gearing. These articles were the start of the development of a coherent theory of finance. The subject has also come to include dividends, efficient markets and option valuation theories.

Finance is one of the major elements which activate the overall growth of the economy.

A well-knit finance system directly contributes to the growth of the economy an efficient financial system calls for the effective performance of financial institution, financial instruments and financial markets.

INVENTORY MANAGEMENT:-

The term business finance mainly involves in raising of funds and their effective utilization, keeping in view, the overall objects of the firm. In a broader sense, finance includes determining what has to be paid for rising money on the best term available and devoting the available funds to the fullest extent.

DEFINITION:

According to Guthman and Dougall, "Business finance can be broadly defined as the activity concerned with planning, raising, controlling, and administration of funds used in the business".

SCOPE AND FUNCTION OF FINANCIAL MANAGEMENT

The approach to the scope and functions of financial management is divided for purpose of exposition, into two categories:

- Traditional Approach

1. Modern approach

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Capital Budgeting in Heritage Foods Ltd, Kasipentla Chitoor Dist.

***M. Pavankumar*[1], *Ch. Venkateswarlu*[2]**

[1]Student,Roll number :20AK1E0033, MBA Department, AITS,Tirupati. E-Mail ID: pavantej918@gmail.com
[2]Associate professor, MBA Dept., AITS, Tirupati.

ABSTRACT :

A number of capital budgeting strategies locate area in primary in addition to superior text books on Financial Management and Corporate Finance.. The research paper investigates the decision making practices of unsung entrepreneur with appreciate to Capital Budgeting the techniques hired. The paper also examines the linkage among the strategies employed and different factors which includes, length of funding outlay, nature of funding.

Introduction :

Capital Budgeting May also be defined as "The selection making manner through which a firm evaluates the purchase of principal constant belongings. It involves firm's choice to make investments its cutting-edge finances for addition, disposition, amendment and substitute of fixed assets. It offers solely with funding proposals, which an basically long time projects and is worried with the allocation of company's scarce economic assets many of the available market opportunities.

In any growing challenge, capital budgeting is extra or less a non-stop technique and it's miles done by using distinctive purposeful areas of anagement including manufacturing, marketing, engineering, monetary control and so on. All the applicable useful departments play a essential function inside the capital budgeting choice process of any corporation, yet at the moment, simplest the economic factors of capital budgeting selection are taken into consideration.

Needs of the study:

The project study is undertaken to analyze and understand the capital budgeting process in HERITAGE FOODS, LTD which gives main exposure to practical implication of theory & knowledge.

To know about the organization –operation of using various capital budgeting techniques.

To know how the organization gets funds from various resources

Scope of the study :

A brief details pertaining to HERITAGE FOODS, LTD with regards to its establishment and financial summary .

For the purpose of this study, a case study of a financed by the corporation has been analyzed and calculate

(cash flows, payback period, average rate of return, net present value, internal rate of return,PI)

Objective of the study :

- To study the various techniques Of capital budgeting of heritage company
- Determination of proposal and investment , inflows and outflows
- To evaluate the investment proposal by using the capital budgeting techniques
- To summarize and to suggest for the better investment proposal

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Working Capital Management in Sibar Auto Parts Private Ltd.

[1]Chiguruvada Hemanth, [2]C. Venkateswarlu

[1]Student of MBA, Annamacharya Institute of Technology & Sciences Tirupathi,
[2]Assistant Professor, Annamacharya Institute of Technology & Sciences Tirupathi,

ABSTRACT:

Working capital is much like the coronary heart of each commercial company. A have a look at focuses on brief time period economic management and Working capital control. Working capital refers to that a part of the company's capital it is required for short-time period financing modern-day assets, this keeps revolving fast and constantly transformed to coins. Hence, this paper analyses economic viability, shape and usage of operating capital inside the corporation as analyses for 5 years from 2016-17 to 2020-21. The examine is specially based on the Secondary information of the agency. Further, to measure the powerful utilization of the statement of operating capital, Ratio analyses had been used. It have become concluded that the working capital is a crucial role of an employer.

INTRODUCTION:

Working capital is that quantity of rate range that's required to perform the day- nowadays operations of a corporation. It might also regard as that position of an employer ordinary capital, that is employed in its brief – time period operations. This operation includes usually such devices consisting of uncooked materials, semi – finished gadgets, finished gadgets, sundry borrowers, short – time period investments and so on., Thus working capital moreover refers to all the fast – time period assets diagnosed vital. There isn't any one of these enterprise for which jogging capital is not needed. The number one goal each enterprise is to maximize shareholders wealth.

Firm should earn sufficient returns to increase the shareholder wealth. To earn regular quantity of earnings, a a success profits activity is crucial. Firm can generate earnings if enough quantity is invested in Current belongings. The want of present day-day property is important due to the fact income do no longer convent into cash at once. There is always a strolling cycle worried inside the conversion of sales into coins. Working capital control is one of the most essential elements of economic management. It paperwork a number one characteristic of the finance supervisor and accountant. It is worried with the troubles that arise in trying to control the modern-day assets, the modern liabilities and the interrelation deliver that exists among them. The manage of contemporary-day belongings is just like that of steady belongings inside the texture that in both instances a firm analyses their effects on its go back and hazard

Working capital management is the useful location of the finance that covers all of the contemporary money owed of the organisation. It is involved with control of the level of character present-day belongings similarly to the control of ordinary going for walks capital.

Mainly the agency used operating capital each day employer responsibilities purposed used. The predominant cause of running capital is to control contemporary assets and cutting-edge-day liabilities. The following technique is used calculation of operating capital.

Net Working Capital = Current Assets ------ Current Liabilities

DEFINITION OF WORKING CAPITAL

Working Capital refers to that a part of the company's capital, which is required for financing quick-time period or cutting-edge property this kind of coins marketable securities, borrowers and inventories. Funds as a consequence, invested in contemporary belongings maintain revolving speedy and are constantly converted into coins and this cash float out once more in trade for different modern-day assets. Working Capital is likewise referred to as revolving or circulating capital or brief-term capital.

The following are some definitions of this institution:

"Working capital way modern property"

MEAD, BAKER, MOOT.

"Working capital refers to a company's investment in brief-term Assets like cash, Short-term securities, and Account receivables inventories."

-WESTON & BRIGHAM.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Ratio Analysis in Shiva Shakthi Dairy (Pvt.)

[1]K. Reddi Sekhar, [2]Ch. Venkateswarlu

[1]Student, MBA, Annamacharya Institute of Technology & Sciences, Tirupati
[2] Assistant Professor, MBA Department, Annamacharya Institute of Technology & Sciences, Tirupati

ABSTRACT

Ratio Analysis is one of the powerful tools of the financial analysis. A ratio can be defined as "The indicated quotient of two mathematical expressions" and as "the relationship between two or more things". Ratio is thus, the numerical or an arithmetical relationship between two figures". It is expressed where on figure is divided by another. In finance analysis ratio is used as a benchmark of a firm.

A ratio is the relationship between two accounting items expressed mathematically. Ratio analysis helps the analyst to make quantitative judgment with regard to concern's financial position and performance. This relationship can be expressed as a percentage or as quotient.

Ratio analysis is the systematic use of ratio to interpret the financial statements so that the strengths and weakness of a firm as well as its historical performance and current financial position can be determined. Undisputedly the ratio analysis occupies place of prime importance.

MEANING OF DEFINITION

According to Prof. Spring field, Prof. Mass & Merrimu, a ratio is defined as "The indicated quotient of two mathematical impression" and as "The relationship between two (or) more things"

SIGNIFICANCE OF RATIO ANALYSIS

Ratio analysis is of great help of commercial bankers, trade creditors and institutional lenders. They judge the ability of borrowing enterprises by observing various ratios like the current ratio, acid test ratio, and turnover of receivables, inventory turnover, and coverage of interest by the level of earnings.

Ratio analysis also helps long term creditors in knowing the ability of a borrowing enterprises to pay interest principal in case earnings decline they find valuable the ratios of total debt to equity and total debt to total assets.

Investors in shares judge the performance of the company by observing the per share into ratios like earnings per share, book value per share, market price per share, dividends per share etc.

Lastly, ratio analysis is of great use of the management of the firm. Management of the firm is interested in every aspect of ratio analysis as it is their overall responsibility to see that the resources of the firm are used most efficiently and effectively and that the firms financial conditions is sound.

STANDARDS FOR COMPARISON

For making a proper use of ratios, it is essential to have fixed standard for comparison. A ratio by itself has very little meaning unless it is compared to some appropriate standard. Selection of proper standards of comparison is a most important element is ratio analysis. The four most common standard used in ratio analyses are as follows:

1. Absolute
2. Historical
3. Horizontal
4. Budgeted

1. Absolute: -

Absolute standards are those, which become generally recognized as being desirable regardless of the type of the company, the time, stage of business cycle, or the objectives of the analyst.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Cash Flow Analysis in Electrosteel Casting Ltd

[1]Gnanendar Reddy C, [2]Dr. D. Shahanaz

[1] MBA Student, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati.
[2]Assistant professor department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati.

ABSTRACT

Cash float assertion is an essential device to investigate the cash function of a business firm. It can denote modifications in coins role at some stage in two monetary years. It also presents information about the cash receipts and the payments of a commercial enterprise for a given period. It presents first rate records that compliments the profit and loss account and balance sheet. Coins float declaration evaluation is statement which affords a complete explanation for the alternate in a firm's cash all through a specific period by specify the company resources and makes use of of coins for the duration of the period from operating, investing and financing activities. It affords handy records approximately an entity's sports in producing cash from operations. It informs about programme to repay debt allotted dividends or reinvest to preserve or enlarge its working ability. It provides facts about its financing sports both debt and fairness and about its investment in each constant property or cutting-edge assets apart from coins. This Article is based at the practice observed and practise for its guidance contained within the numerous textual content books for the steering of the students and accountants. It is hoped that the content material of this Article might assist the readers to apprehend Cash-glide statement properly.

KEYWORDS: Cash operating sports, making an investment activities, economic sports

Introduction

Cash Flow Analysis

Cash Flow Analysis is a summarized announcement displaying cash inflows and cash outflows of running, financing and making an investment nature over a selected period of time. It requires starting and remaining balance sheet and also profit and loss account. Cash contains cash handy and call for deposits with banks. Cash equivalents are short term, especially liquid investments which can be without difficulty convertible into acknowledged amounts of cash and that are difficulty to an insignificant risk of adjustments in fee.

Cash flows are inflows and outflows of coins and coins equivalents. Operating sports are the most important revenue-producing activities of the enterprise and different sports that are now not making an investment or financing activities. Investing sports are the purchase and disposal of long-time period property and other investments now not protected in coins equivalents. Financing activities are activities that result in modifications inside the size and composition of the proprietors' capital (which includes desire proportion capital within the case of a organization) and borrowings of the corporation.

Cash and Cash Equivalents

Cash equivalents are held for the purpose of assembly quick-time period cash commitments instead of for funding or different purposes. For an funding to qualify as a cash equivalent, it ought to be quite simply convertible to a acknowledged amount of cash and be situation to an insignificant risk of modifications in fee. Therefore, an funding commonly qualifies as a cash equivalent most effective when it has a short maturity of, say, three months or much less from the date of acquisition. Investments in shares are excluded from cash equivalents unless they're, in substance, cash equivalents; for instance, choice stocks of a company obtained shortly earlier than their distinct redemption date (furnished there may be most effective a trifling threat of failure of the agency to repay the amount at adulthood).

Review of Literature

Definitions:

Cash equivalents are quick-term, noticeably liquid investments that are with ease convertible into acknowledged quantities of cash and which can be situation to a mere hazard adjustments in fee.

Cash flows are inflows and outflows of coins and coins equivalents.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Performance of Selected Mutual Funds with Special Reference to Reliance (Nippon) Mutual Funds in Tirupati

***Dr.D.Shahanaz*[1] , *E.Praveen*[2]**

[1]Associate professor, MBA Dept.,AITS,Tirupati. E-Mail ID:praveenpraveen0653@gmail.com
[2]Student,Roll number :20AK1E0033, MBA Department, AITS,Tirupati

ABSTRACT :

A Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. The money thus collected is then invested in capital market instruments such as shares, debentures and other securities. The income earned through these investments and the capital appreciation realized isshared by its unit holders in proportion to the number of units owned by them.Thus a Mutual Fund is the most suitable investment for the common man as it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost. The flow chart below describes broadly the working of mutual funds.

Investment means conversion of money/cash into the monetary asset. Investment is a scarifying the current amount for future benefit. Investment is the employment of funds with the aim of achieving additional income or growth in value. The essential quality of an investment is that it involves "waiting" for reward. It involves the commitment of resources, which have been saved or put away from current consumption in a hope that some benefits will accrue in future. There are a number of fields where people can invests there surplus money, just like in Bank, Mutual fund, Insurance, Chit funds, Post office, Purchasing directly shares from the company and many more.

Introduction

What is a Mutual Fund?

To state in simple words, a mutual fund collects the savings from small investors, invest them in Government and other corporate securities and earn income through interest and dividends, besides capital gains. It works on the principle of 'small drops of water make a big ocean'. For instance, if one has Rs.1000 each from a lot of other people, then, one could create a 'big fund' large enough to invest in a wide varieties of shares and debentures on a commanding scale and thus, to enjoy the economies of large scale operations. Hence, a mutual fund is nothing but a form of collective investment. It is formed by the coming together of a number of investors who transfer their surplus funds to a professionally qualified organization to manage it. To get the surplus funds from investors, the fund adopts a simple technique. Each fund is divided into a small fraction called "units" of equal value

INDUSTRY PROFILE :

The Indian retail brokerage industry consists of companies that primarily act as agents for the buying and selling of securities (e.g. stocks, shares, and similar financial instruments) on a commission or transaction fee basis. It has two main interdependent segments: Primary market and the Secondary market

Primary market: it is a market where the new securities are issued.

Secondary market: it is a market where the stocks are traded

COMPANY PROFILE :

Reliance Mutual Fund, a part of the reliance Anil Dhirubhai Ambani Group is one of the fastest growing mutual funds in the country, with the presence in over 116 locations across India, an investor base of over 4.6 million and manager assets over Rs 77210 crore as a on January 31, 2008. Reliance Mutual Fund offers investors a well- rounded portfolio of product to meet varying investor requirements.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Advertisement and Sales Promotion of LG Company with Reference to HS Enterprises, Tirupati

[1]R.Ram Nohan Rao, [2]Dr D. Shahanaz

[1]Student of II MBA, Annamacharya Institute of Technology & Sciences, Tirupati.

[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati .

ABSTRACT:

Advertising and sales promotion are the tools the marketers used to increase shot term sales.Both sales promotions and advertising techniques are used to attract new customers retain existed customers and to build strong relation between consumers and brand .It is considered as urgent tool to attract customers . These tools are mainly used to increase their profits. The main purpose of this study is to examine the policies and procedures followed by LG Electronics in detail and assess its impact on consumers.

Keywords: Sales promotion ,Advertising ,Consumers,Profits.

INTRODUCTION:

Adverting is only one element of the promotion mix, but it often consideredprominent in the overall marketing mix design. Its high visibility and pervasivenessmade it as an important social and encomium topic in Indian societyPromotion may be defined as "the co-ordination of all seller initiated effortsto set up channels of information and persuasion to facilitate the scale of a good orservice." Promotion is most often intended to be a supporting component in amarketing mix. Promotion decision must be integrated and co-ordinate with therest of the marketing mix, particularly product/brand decisions, so that it mayeffectively support an entire marketing mix strategy.

1. Advertising is the dissemination of information by non-personal meansthrough paid media where the source is the sponsoring organization.

2. sales promotion is the dissemination of information through a wide variety of activities other then personal selling,advertising and publicity which stimulate consumer purchasing and dealer effectiveness.

REVIEW OF LITERATURE:

1. Sandhe (2016) studied the impact of advertisements on peoples‟ buying behavior. How much belief is there in the advertisements, what is the attitude towards advertisements and overall impact of advertisements? For this purpose a sample size of 500 respondents from across Gujarat was targeted and data was collected through a structured questionnaire.

2. Ramu (2020)This paper is based on stratified random method of sampling and the sample size is limited to and survey is taken on Chennai only and most importantly the survey was made in an authenticated way for appropriate result and also tries to reveal the effects of advertising on the buyer behaviour

3. Cobbinah (2021) studied the effects of sales promotion on consumer repurchase intention, and the strength of other factors such as price sensitivity, brand Preference, and perceived usefulness that might impact the association between sales promotion and repurchase intention-in the case of mobile phone consumers.

NEED FOR THE STUDY

Advertising and sales promotion helps making people aware of the new product so that the customers come and purchase the product.advertising helps creating goodwill for the company and gains customer loyalty after reaching a mature age.while advertising presents a reason to buy a product,sales promotion offers a short term incentive to purchase.

International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 6 Issue 6, September-October 2022 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

A Study on Employee Perceptions on Employee Provident Fund in Amara Raja Infra Pvt. Ltd., Tirupati

P. Saibrahmani[1], Dr. D. Shahanaz[2]

[1]Student, [2]Assistant Professor,
[1,2]Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati, Andhra Pradesh, India

ABSTRACT

Employees' provident fund (EPF), 1952 is retirement benefit scheme which is maintained by the Employee provident fund organization (EPFO), 1951. EPF is serve as long term savings to support an employee retirement. Under this scheme the employee and the employer contribute to the EPF scheme on monthly basis in equal proportions on 12% deducting from the basic salary and dearness allowances whole of the amount is deposited by the employer. Provident fund is also a welfare scheme for the benefits of the employees. The interest earned on their investment is also been credited in PF account of the employees. When the retirement time of employee, accumulated amount is given to the employees, if certain conditions are fulfilled by them. All the members of EPF can access their pf accounts through online and they can perform functions like withdrawal and checking EPF balance. This study aims to create awareness to the employees and assess the perceptions towards the EPF scheme, and their importance in the AMARARAJA INFRA PVT LTD, Tirupati.

KEYWORDS: *EPF, Employee hurdles, Benefit at the time of retirement*

How to cite this paper: P. Saibrahmani | Dr. D. Shahanaz "A Study on Employee Perceptions on Employee Provident Fund in Amara Raja Infra Pvt. Ltd., Tirupati" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-6 | Issue-6, October 2022, pp.1069-1072, URL: www.ijtsrd.com/papers/ijtsrd52017.pdf

IJTSRD52017

INTRODUCTION

Employees' provident fund (EPF), is the most beneficial investment scheme for the salaried persons in India. The Employees" Provident Fund Organization, it is one of a statutory body under the Ministry of Labour and Employment, Government of India administers schemes framed under the Employees' Provident Funds & Miscellaneous Provisions Act, 1952 namely Provident Fund, Pension and Insurance to industrial employees. The PF account benefits are extended the establishments where employees are 20 or more persons. The employee and the employer contribute to the EPF scheme on monthly basis in equal proportions on 12% deducting from the basic salary and dearness allowances whole of the amount is deposited by the employer.

Employee Provident fund is a welfare scheme for benefited the employees. The interest earned on this investment is credited in PF account of the employees. When the time of retirement, accumulated amount is given to the labours, if they satisfied with the conditions. All members of EPF can access their pf accounts through online and they can perform functions like withdrawal and checking EPF balance.

Applicability of the Scheme

It is applicable:

1. Every factory engaged in any industry Schedule 1 in which 20 or more persons are employed.
2. Every other establishment employing 20 or more persons or class of such the Central Govt. may notify.
3. Every other establishment is notified by the Central Government even if employing less than 20 persons.

Every employee, including the one employed through a contractor, who is in receipt of wages up to Rs.6,500 p.m., shall be eligible for becoming a member of the funds. The condition of 3 months continuous service or 60 days of actual work, for membership of the scheme

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on the Effect of Brand Image on Consumer Preference with Reference to Bhrathi Airtel Limited, Tirupati.

[1]M. Suresh, [2] Dr. D. Shahanaz

[1]MBA Annamacharya Institute of Technology and Science, Tirupati

[2]Assistant Professor, Annamacharya Institute of Technology and Science, Tirupati.

ABSTRACT:

A brand recognizes and isolates products having a place with one individual from having a place with someone else. A brand is one of the components of promoting, publicizing. Great brand carries critical advantages to the producer or the merchant. A brand name might comprise of a brand name and a brand image. There are a few brands system assessment model dissects in the article, similar to capital market-situated brand esteem model, Aaker's image esteem model, the Interbrand Brand Evaluation System, which makes a difference assess brand worth and advantage. The present study examines the effect of brand image on consumer preference with reference to Bharathi Airtel Limited, Tirupathi.

Key Words: Brand, Brand image, Brand Worth, Brand Worth Assessment Strategies.

Introduction

Brand image is the client's view of your image in light of their connections. It can develop over the long run and doesn't be guaranteed to include a client making a buy or utilizing your item or administration.

Items that could help them. Marks additionally enlighten the purchaser something concerning item quality. Purchasers who generally purchase a similar brand realize that they will get similar highlights, advantages, and quality each time they purchase. Marking likewise gives the vender a few benefits; the brand name turns into the premise on which an entire story can be worked about an item unique characteristic. Assembling and overseeing groups is maybe the advertiser most significant assignment. Will talk about marking system in additional Marking helps purchasers in numerous ways. Brand names assist purchasers with recognizing subtleties I the underneath

REVIEW OF LITERATURE

Brand Image alludes to the act of makers consuming their imprint (or brand) onto their items. "Brand" is gotten from the Old Norse brand, signifying "to consume."

Albeit associated with the historical backdrop of brand names and including prior models which could be considered "proto brands, (For example, the advertising quips of the "Vesuvinum" wine containers found at Pompeii), brands in the field of mass-showcasing started in the nineteenth hundred years with the approach of bundled products. Industrialization moved the development of numerous family things, like cleanser, from neighborhood networks to incorporated manufacturing plants. While transportation their things, the processing plants would in a real sense brand their logo or emblem on the barrels utilized, broadening the importance of "Brand" to that of brand name.

Bass and Company, the English distillery, asserts their red triangle brand was the world's most memorable brand name.

Lyle's Brilliant Syrup makes a comparable case, having been named as England's most seasoned brand, with its green and gold bundling having remained practically unaltered starting around 1885.

Cows were marked well before this; the expression "free thinker", initially meaning an unbranded calf, comes from Texas farmer Samuel Augustus Dissident who, following the American Nationwide conflict, concluded that since any remaining steers were marked, his would be distinguished by having no markings by any stretch of the imagination. Indeed, even the marks on artworks of popular craftsmen like Leonardo Da Vinci can be seen as an early marking apparatus.

OBJECTIVES OF THE STUDY

- To study the customer opinion on brand image of AIRTEL TELESERVICES.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Marketing Strategies of Yamaha with Reference to RK Enterprises, Tirupati

Dr. D. Shahanaz , D.Suresh

Annamacharya institute of Technology and Science tirupati, India

ABSTRACT:

CRM is short for customer relationship management. The ideas behind customer relationship management are by no means new. Today it's widely acknowledged that how you understand and treat your customers, goes a long way to determining your future success and profitability, and companies are making bigger and bigger investments to do just that. The concepts of customer relationship management have been in the air ever since people started exchanging things, but CRM as a term came into existence in the mid-1990s. Companies are already pouring billions of dollars into CRM solutions—software and services designed to help businesses more effectively, manage customer relationships through any direct or indirect channel a customer might use. That's why, the market for CRM technology is exploding.

Keywords: Brand, Brand Image, Brand Value, customer-oriented organization, Customer's perception

Introduction:

Marketing is the business function that identifies customer needs and wants. Creating customer value and satisfaction are the heart of modern marketing thinking and practice. Marketing is the delivery of customer satisfaction at a profit.

Marketing means managing markets to bring about profitable customer relationships. However, creating these relationships take work. Sellers must search for buyers, identify must create a need – satisfying marketing offer (product). It must decide how much it will charge for the offers (price) and how it will make the offer available target customer s (place). Finally, it must communicate with the target customers about the offer and persuade them of its merits (promotion). The concepts of exchange and relationships lead to the concept of market. A market is the use of actual and potential buyers of a product. These buyers share a particular need or want that can be satisfied through exchange relationships.

Customer relationship is a tool for identifying way to create more customer value& satisfaction. Every firm is a synthesis of activities that are performed to design, produce, and market, deliver and support its product.

Many companies are intent on developing stronger bonds with their customers called **Customer relationship management** (CRM). This is the process of managing detailed information about individual customer and carefully managing all the customers "touch points "with aim of maximizing customer loyalty

Marketing Strategy:

Marketing strategy is a long-term, forward-looking approach and an overall game plan of any organization or any business with the fundamental goal of achieving a sustainable competitive advantage by understanding the needs and want of customers.

***Definition*:**

A marketing strategy refers to a business's overall game plan for reaching prospective consumers and turning them into customers of the products or services the business provides. A marketing strategy contains the company's value proposition, key Marketing Strategies messaging, data on target customer demographics, and other high-level elements.

A marketing strategy refers to the methods you implement to promote your products and services to your target audience. It can include website content, television and radio advertising, and content launched on social media platforms. Developing an effective marketing strategy for your business is the key to growth, expansion, and long-term success. The challenge, however, is that developing the right marketing strategy can involve a lot of hit or miss, and for small businesses, the costs related to misunderstanding your market can be catastrophic.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Funds Flow Analysis in Electrosteel Casting Limited, Srikalahasti.

[1]P. Varaprasad Reddy, [2] Dr. D. Shahanaz

[1]Student, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati.
[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati.

ABSTRACT

Fund flow analysis well-known shows the electricity and weak point in utilization of available funds for business operations. This is a try and pick out and analyze the elements with reference to ELECTROSTEEL CASTING LIMITED, SRIKALAHASTI. The objective of this observe is to discover the power and weak spot in fund float analysis in each quick term and long term. This look at is based totally on secondary statistics, economic assertion of business enterprise for five years viz., 2016-17, 2017-18, 2018-19, 2019- 20, 2020-21 annual reports for these five years facts. This have a look at will offer critical factors concerning how its fund is utilized for the operations. It will offer treasured experience on its performance resulted from its operation. From this analysis, I have concluded that fund management at ELECTRO STEEL CASTINGS LIMITED (both short time period & long term) is un favourable.

INTRODUCTION

Funds Flow Analysis is a declaration of assets and application of funds. In short, it is a technical device designed to spotlight the trade in the economic circumstance of a enterprise corporation between two balance sheets. Funds Flow Analysis is widely utilized by the financial managers in overall performance in their jobs. It has come to be a beneficial device of their analytical package. Finance is one of the fundamental foundations of all kinds of economic activities. It is the master key, which provides access to all of the assets for being hired in production. Hence it is rightly said that finance is lifeblood of any agency, except being the scarcest elements, it is also the most quintessential requirement. Without finance neither any commercial enterprise may be commenced nor efficaciously run. Provision of sufficient price range at the required time is the key to achievement of difficulty.

REVIEW OF LITERATURE

Deloof Marc. (2003)

Presents a photo of how working capital administration influences the gainfulness of Belgium firms. The essayist has made utilization of exact investigation for the example firms. It was watched that the greater part of the organizations have an expansive measure of trade contributed out working capital. It can, in this way, be derived that the path in which working capital is overseen will significantly affect the benefit of the organizations.

Filbeck Greg and Krueger Thomas M. (2005)

Construct their review with respect to the evaluations of working capital administration distributed in CFO magazines. The discoveries of the examine gives knowledge into working capital execution and working capital administration, which is clarified by full scale financial elements, loan fees, rivalry, and so on., and their effect on working capital administration.

COMPANY PROFILE

Electro steel Castings Limited

Electro steel Castings Limited is India's ideal manufacturer and exporter of Ductile Iron Steel and Fittings having its centers in Khardah, Haldia and Bansberia in West Bengal and Elavur in Tamil Nadu.

The Company has a strong logo presence around the globe and has one triumphing goal - to stay the first preference inside the market segment. Electrosteel Castings Limited (ECL) is a pioneer inside the manufacturing of Ductile Iron Steel, Flange Pipe in India, with a strong presence in over 70 nations throughout the globe.

What began off as a Cast Iron Pipe manufacturing facility 60 years back, has metamorphosed into a true Indian multinational, spanning five continents and ninety+ countries throughout the globe. Touching lives with #technologythatcares, our pipelines carry easy consuming water and have been a lifeline

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Capital Budgeting in Dodla Dairy Private Limited in Palamaneru

***Dr.N.Chandrika*[1], *T.Ajay*[2]**

[1]Associate professor, MBA Dept.,AITS,Tirupati. E-Mail ID: chandrikaraju02@gmail.com
[2]Student,Roll number : 20AK1E0001, MBA Department, AITS,Tirupati

DOI: https://doi.org/10.55248/gengpi.2022.3.9.60

ABSTRACT

Capital budgeting is a step by step process that business uses to determine the merits of an investment project. The decision of whether to accept or deny an investment project as part of a company's growth intiatives,involves determining the investment rate of return that such a project will generate.This is focuses on payback period of dodla dairy private limited. And also it focuses on calculations on Net present value and internal rate of return value and also profitability index. The result shows that more than one profitability index and positive NPV.

Keywords: Growth, Payback Period, Long-Term Investment, Profitability.

INTRODUCTION

It is a process of investing funds. Current funds which are long term activities with view to earn more profits over a series of years. The investment decision means a decision as to whether (or) not money should be invested in long term projects. Such projects may include:

- Setting up a factory
- Installing a new machinery
- Creating additional capacities
- Make (or) purchases new products

The main characteristics of a capital expenditure are that the expenditure is incurred at one point of time whereas benefits of the expenditure are realized at different points of time in future. Capital budgeting process involves planning, availability and controlling, allocation of long-term investment funds.

CONCEPT OF CAPITAL BUDGETING

Efficient allocation of capital is one of the most important function of the financial management in modern times. This function involves the firm decision to commit its funds in long-term assets and other profitable activities. The decision to invest funds in the long term assets of a firm are quite significant and they will influence the firms wealth, determine the size, get the pace and direction of its growth and also affect the business risk.

In evaluating such investment proposals, it is important carefully consider the expected benefits of investment against the expenses associated with organization are frequently faced with Capital Budgeting decisions. Any decision that require the use of resources is a capital budgeting decisions .Capital budgeting is more or less a continuous process in growing concern

A Study on Customer Satisfaction Towards RK Enterprises Pvt Limited (Yamaha) in Tirupati

Dr. N. Chandrika[1], T. Bhanuprakash[2]

[1]*Associate professor, MBA Dept., AITS, Tirupati.*

[2]*Student, MBA Department, AITS, Tirupati*

Abstract: **One industry that is evergreen in everyone's life is the automotive business. India is one of the world's top two-wheeler producers and manufacturers. In terms of the quantity of two-wheelers produced and domestic sales, it is only surpassed by Japan and China. When automobile manufacturing began in India in the early 1950s, the two-wheeler Scooter production in the nation was established by Products of India (API). The level of satisfaction is determined by the customer. In this paper convenience sampling used for selection of 160 respondents. The primary goals are to identify consumer loyalty and pleasure with Yamaha bikes. This research uses descriptive methodology. The responders who own Yamaha bikes are included in the population's total. The study's key conclusions are that the majority of respondents thought Yamaha had improved. According to the research, demographic parameters including age, gender, and occupation have less of an impact on customer satisfaction factors than Yamaha bikes. According to the research's findings, most customers are satisfied with Yamaha bikes in light of the specified factors.**

Key words**: customer satisfaction**

1. INTRODUCTION

Customer satisfaction means taking complete care of customer by giving them complete knowledge about the product and about all the feature of that particular product Customer satisfaction is the end result of your interaction with the customer. By giving the best customer service and making sure that the customer was given the best resolution at the end of the call, then we can say that the customer is satisfied even if it's not verbally said.

Company can give complete knowledge like each and every query must be clarified by the seller. If a customer remembers you for future business then we can say that customer is satisfied.

According to Harold E Edmondson “Customer satisfaction” is defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals. "Customer satisfaction is defined by whether the customer chooses to do business with you or your company in the future. Many factors play a role in customer satisfaction, including customer service, product quality and the ease of doing business. Companies must consider customer satisfaction as an important role in the lifetime value of a customer.

CUSTOMER SATISFACTION

A term frequently used in marketing, is a measure of how products and services supplied by a company meet or surpass customer expectation. In a survey of nearly 200 senior marketing managers, 71 percent responded that they found a customer satisfaction metric very useful in managing and monitoring their businesses.

It is seen as a key performance indicator within business and is often part of a Balanced Scorecard. In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy.

International Journal of Research in Engineering and Science (IJRES)
ISSN (Online): 2320-9364, ISSN (Print): 2320-9356
www.ijres.org Volume 10 Issue 10 ǁ October 2022 ǁ PP. 45-50

A Study on Capital Budgeting Towards Electrosteel Casting Limited in Srikalahasti

* J.DAKSHAYANI, ** Dr. N. CHANDRIKA
**Student, Roll number: 20AK1E0003, MBA Department, AITS, Tirupati*
***Associate professor, MBA Dept., AITS, Tirupati.*

ABSTRACT:
Businesses employ a step-by-step procedure called capital budgeting to assess the merits of investment projects. Studies on capital budgeting determine the ideal investment sizes and have an effect on investment effectiveness. Determine the investment rate of return that a project will produce before deciding whether to accept or reject it as part of your company's growth ambitions. The payback time, internal rate of return, and net present value of Dodla Dairy Private Limited are the main topics of this. The outcome demonstrates that there are multiple profitability indices and a positive NPV. In this studythe management expected minimum rate of return is 40%. The result shows that the project ARR greater than 40%.
The net income of the project is discounted at the minimum required rate of return 8%.The result shows the capital invested is getting more return which is greater than 10%. And profitability index also more than one. Finally electro steel casting company is performing optimally with accepted evaluation criteria of capital budgeting techniques.

Date of Submission: 20-09-2022 Date of acceptance: 04-10-2022

I. INTRODUCTION

An efficient allocation of capital is the most important finance function in the modern times. It involves decisions to commit the firm's funds to the long-term assets. The investment decisions of a firm are generally known as the Capital Budgeting, or Capital Expenditure Decisions. A Capital Budgeting Decision may be defined as the firm's decision to invest its current funds most efficiently in the long-term assets in anticipation of an expected flow of benefits over a series of years. The project aims at evaluating the investment proposal for setting up a facility in ELECTROSTEEL CASTING LTD, SRIKALAHASTI. The longterm investment decision of the firm is generally known as the capital budgeting or capital expenditure decision. Capital budgeting is a decision making process for investment in assets that have long term implications, affect the future growth and profitability of the firm and basic composition and assets mix of the firm. It involves

- Measuring the benefits and costs associated with each alternative option in terms of incremental cash flows.
- Evaluating different proposals in the light of return expected by the investors of the firm and the return promised by the proposal.

II. REVIEW OF LITERATURE:

- Oliver (1981) put forward a definition as, "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumers' prior feelings about the consumption experience".
- Schiffman and Kanuk (2004) defines customer satisfaction as "The individual's perception of the performance of the product or service in relation to his or her expectations".
- Woodruff and Gardian (1996) define "Satisfaction, then, is the evaluation or feeling that results from the disconfirmation process. It is not the comparison itself (i.e., the disconfirmation process), but it is the customer's response to the comparison. Satisfaction has an emotional component."

ABOUT ELECTROSTEEL GROUP

Electrosteel Group was founded in the year 1955 with the name Dalmia Iron and Steel Ltd, It has been fulfilling its vision of 'Carrying life to people, safe drinking water for all' over half a century. As the pioneer of introducing Ductile Iron Steel in India, the Electrosteel Group has established itself as an international brand that values commitment to excellence.Being the country's leading pipeline solutions provider, Electrosteel has been providing clean drinking water to millions - a promise of quality that has led it to achieve international benchmarks and recognition worldwide as a global leader that understands the stockyards have a comprehensive stock of DI Steel, Fittings and flanged Steel. It offers technical advice at the design stage and comprehensive

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Inventory Management in Dora Plastics, Pvt Ltd Tirupati

[1]K. Harish Babu, [2]Dr. N. Chandrika

[1]MBA Student, Annamacharya Institute of Technology &Science Tirupati

[2]Associate Professor, Ph.D., Deportment of business administration, Annamacharya Institute of Technology & Science Tirupati

DOI: https://doi.org/10.55248/gengpi.2022.3.10.24

ABSTRACT

The aim of the study is to examine the inventory management process. The significance of this research is based on the benefits that can be obtained by identifying the issues of inventory control. The methodology used on-site study, and annual report analysis. Inventory management is an important area of manufacturing industry. If company fails to manage inventory, they will face failure. It is a challenge for the company to maintain fair inventory. There are various inventory management techniques available for maintaining fair inventory level in the company. The basic objective of this paper is to study about inventory management techniques used in Dora plastics pvt ltd. and find out some measures for improvement on inventory management process of the concerned company. The present system of inventory management of the company is good. For improvement of the present inventory management system, company should adopt other inventory management techniques.

Keywords- Inventory, Challenges, Management & Techniques.

INTRODUCTION TO INVENTORY

Inventory in wider experience, is defined as any idle aid of an company. It is a bodily inventory of goods saved dept. For the purpose of future affairs. The time period is normally used to suggest raw materials in manner, completed merchandise, packing, spares and others – stocked on the way to meet expected demand or distribution in the future. Though inventory of substances is an idle resource –it isn't supposed for immediate use – it's far almost essential to keep a few inventories for the easy functioning of an enterprise. For example, let us consider an organization that has no stock of substances at all. When this company gets a income order, it's going to must order out the raw cloth required to complete the order, wait until those arrive and then begin production. This would keep the customers continuously to attend too long for the shipping of the products ordered. Among other disadvantages of no longer maintaining the inventories, the organization may also have. the burden on production shops might vary from length relying upon the orders accessible; the enterprise many not be capable of provide adequate customer support within the remember of completion, ready and price.

INVENTORY ANALYSIS METHODS: -

ABC ANALYSIS

This evaluation is primarily based on the annual consumption fee and at the Pareto's Law. Under this analysis all gadgets in shops are classifies into 3 primary classes' A, B and C. 10% of the full wide variety of objects account for about 70% of the entire consumption fee.

VHP CLASSIFICATION: -

This analysis is based on criticality of inventories. It is used to decide the dricality of an item and its impact on production and other offerings. It is especially used for class of spare elements.

HML CLASSIFICATION: -

The High Medium and Low (HML) class follow the same method as is adopted in ABC class. Only distinction is that during HML, the classification unit fee is the criterion and no longer the once-a-year consumption fee

SDE CLASSIFICATION: -

The SDE analysis is based upon the supply of gadgets and may be very beneficial within the context of scarcity of deliver. In this evaluation. "S" refers to 'scare' gadgets, typically imported, and those which can be in short supply. "D" refers to tough items which are to be had indigenously but are difficult

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Working Capital Management at Shiva Shakti Dairy Private Limited, Sodum (Chittor District)

***Dr. N. Chandrika*[1], *G Jyothish Kumar*[2]**

*Associate professor, MBA Dept., AITS, Tirupati. E-Mail ID: chandrikaraju02@gmail.com, Contact number: 8247070788.

**Student, Roll number: 20AK1E0021, MBA Department, AITS, Tirupati

DOI: https://doi.org/10.55248/gengpi.2022.3.10.29

ABSTRACT:

A Working capital management ensures a company has sufficient cash flow in order to meet its short-term debt obligations and operating expenses. The needs of efficient working capital management must be considered in relation to other aspects of the firms' financial and non-financial performance. The capitals noticeably go along with the operative cycle. A poring over of the operative cycle reveals that funds endowed within the operation area unit recycled back in to money. The shorter the amount of operative cycle the larger are going to be the turnover of the funds endowed in varied functions. The shorter amount of operative cycle shows higher potency of a firm. The potency of assets management are often determined by the in operation cycle of the firm. This paper aims at analyzing the potency of assets management through the connection between in operation cycle amount and profitableness of Shiva sakthi private limted.Components of WCM showed a positive impact on firms' profitability.

Key Words: Working Capital, Operating Cycle, Profitability, Operating Profit.

Introduction:

Working capital management aims at more efficient use of a company's resources by monitoring and optimizing the use of current assets and liabilities. Working capital is the difference between your company's **current assets**—cash, inventory, accounts receivables—and its **current liabilities**—short-term loans, accrued liabilities, and accounts payables. It must be monitored to ensure a positive cash flow, and when handled correctly, it can improve your company's profitability. In practice, it deals with the cash conversion cycle-or, how long it takes to turn inventory into sales, receive payment, and pay vendors.The importance of working capital management to your business cannot be understated. In fact, the management of working capital is one of the strongest indicators of the health of a company. But what is working capital, exactly. In a nutshell, working capital is the difference between your firm's available assets and its liabilities, and includes things on your balance sheet such as cash, unpaid invoices, existing inventory, current accounts payables, and liabilities. That seems simple enough. But how do each of these different elements come together to form the basis of working capital management.

Research methodology:

SOURCES OF DATA: For the purpose of the present study, data from two sources has been collected, namely primary data and secondary data.

PRIMARY DATA:

In this study, primary data plays a vital role for analysis, interpretation, conclusion and suggestions.For the purpose of collecting the same, 100 respondents have been randomly selected. Even the response of the respondents was taken into consideration.

SECONDARY DATA:

Secondary data is data which is collected and compiled for other purposes Few of the main sources of secondary data include newspapers, business journals, magazines, internet and company reports, etc

Scope of the study:

Financial management is that the managerial activity is concerned with the planning and controlling of the firm's financial resources. Though it was a branch of economics till 1890 as a separate activity or discipline, it is of recent origin. Still it has no unique body of knowledge of its own and heavily on economics for its theoretical concepts even today.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Customer Satisfaction Towards Bharathi Airtel Limited in Tirupati

[1]Dr. N. Chandrika, [2]A. Raj Kumar

[1]Associate Professor, MBA Dept, AITS, Tirupati
[2]Student, MBA Dept., AITS, Tirupati

DOI : https://doi.org/10.55248/gengpi.2022.3.9.61

ABSTRACT:

The project entitled "Customer satisfaction towards Bharathi Airtel in Tirupati city " is executed with a goal to decide the purchaser preference and pride. An imaginative takes a look at turned into carried out to obtain the targets. The study results shows that 100 respondents satisfied a nicely-dependent questionnaire having a listing of statements concerning products, services & facilities furnished with the aid of the provider issuer. The essential goal of the observe was to understand how the clients of AIRTEL Broadband understand its Services in Tirupati are glad with the offerings furnished through AIRTEL. The factors affecting the preferences of the customers are: Core offerings (like accurate insurance, properly connectivity and community best) and contact charge. Further results show that there may be a vast relation among the sign call and the choice of customers. Hence, it has been encouraged that telecom businesses ought to recognition on connectivity, call price, insurance and network quality.

KEYWORDS: Airtel, Comparative have a look at, Customer delight, Mobile connection

INTRODUCTION

Marketing is the artwork of making, pleasant the customers via assembly the wishes of clients and by using creating fee satisfaction for them. As Peter Drucker says "the essence of advertising is that the entire enterprise must be visible from the factor given of the customer". However, customers face a full-size array of product and brand alternatives charges, materials and to recognize the needs and choices of the clients it will become imperative for us to carry out research together records We agree with that clients estimate which give will supply the most price to them and which will deliver and maximize cost, within the bounds of research costs and confined expertise, mobility and profits they shape an expectation affects both purchase and repurchase possibility. The motive of any advertising and marketing studies is to provide records at a particular time on consumer, exchange, competition and the destiny manufacturers, as a way to allow entrepreneurs to formulate a success technique in their quest for clients' thoughts proportion and marketplace percentage

REVIEW OF LITERATURE

- Kotler(1997) defines purchaser delight as follows: "Satisfaction is a person's emotions of pleasure or unhappiness on account of evaluating a Product's perceived overall performance (or final results) with regards to his or her expectancies".
- Brown (1992) defines patron satisfaction as: "The country wherein customer needs, needs and expectancies at some stage in the service or product's lifestyles are met or passed resulting in repeat buy, loyalty and favorable phrase-of mouth.
- (Adrian Thompson, 2002) it's a well-known fact that no commercial enterprise can exist without customers. Customers service, like several factor of enterprise, is a practiced art that takes time and effort to grasp. All you need to do to acquire this is to stop and transfer roles with the consumer. What could you want from your business if you had been the purchaser? How might you need to be dealt with? Treat your customers like your pals and that they'll constantly come lower back.
- (SIS International Research, 2005) This article covers 8 approaches to reinforce consumer pleasure, detailing aspects of the purchasing revel in that may be advanced. Concrete thoughts pulled from market studies research deal with dissatisfying conditions encountered via clients and create proactive approaches for corporations to reward relationships with clients.

RESEARCH METHODOLOGY

From the times of business revolution when items & services had been produced to the cutting-edge, the emphasis has shifted from the manufacturers to the patron and his needs, and with the patron turning into more involved, in the advertising and marketing method there's more need for records concerning

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on the Role of Social Media Marketing in Generating Leads with Reference to Sig Overseas at Hyderabad

[1]Dr. N. Chandrika, [2]Tejasri. A

[1]Associate Professor, MBA Dept, AITS, Tirupati
[2]Student, Roll number:20AK1E0068, MBA Dept., AITS, Tirupati
DOI: https://doi.org/10.55248/gengpi.2022.3.9.59

ABSTRACT

Social media advertising have been cited by international organisations as a viable merchandising strategy. These days, social media is among the "quality opport unities" a product has to connect with capable customers. The means of social contact are community social networking websites. These new media successfully connect with consumers by connecting with them at a deeper level. Since early in the season before, local online marketing has become the new slogan for many manufacturers.

Promoters are taking into account a variety of different social media prospects and beginning to use new social missions at a higher cost than ever. Local web advertising has become more cutting-edge, as have the businesses that use it. If the competition is making waves with its products and services, one cannot afford to live a life free of social obligations. As amazing as it is, the explosion of social media trends is also annoying in how quickly it is evolving. The paper focuses on role of social media marketing in generating leads with reference sig overseas. It is Best Overseas Education Consultancy in Hyderabad has over 20 years of experience and has assisted more than 15000 students by offering them opportunities to study overseas.

Key word: Abroad, Advertising, Traditional marketing, Digital marketing, Social media

INTRODUCTION

Digital marketing, also known as online marketing, Internet advertising, or web advertising, is the term used to describe marketing activities carried out online as opposed to traditional marketing methods such as print media, in-person promotions, television, and radio commercials. A direct result of the global phenomenon that is the Internet and the success of digital advertising and marketing platforms in generating sales and awareness is the rapidly expanding virtual advertising industry. Digital advertising offers more realistic rates than traditional marketing and advertising techniques (which is especially important for small and medium-sized businesses and start-ups), accurate targeting, and excellent reporting. Social media is a concept that has sparked a lot of interest in both social networking groups and individual users.

ABOUT SIG OVERSEAS

SIG-Best Overseas Education Consultancy in Hyderabad has over 20 years of experience and has assisted more than 15000 students by offering them opportunities to study overseas. SIG Overseas is recognised as one of Hyderabad's top Canadian immigration specialists. Since 2000, it has been offering its services. Since its founding in Melbourne in 2001 and expansion across the globe, SIG Overseas Education has become the industry leader in global education. SIG Overseas Educational Consultancy is a reliable school for preparation for international entrance exams. Based on 1 employee review on Ambition Box, SIG Overseas has received a score of 4.0 out of 5. The best-rated skill development programme is offered by SIG Overseas. Australian citizen and graduate **Mr. VAMSI K PARVATHANESI** is the founder and chairman of SIG Overseas Group. He grew the organisation by opening subsidiaries abroad in countries including Vietnam, Sri Lanka, India, Indonesia, and Nepal. just 15 branches in India. a demonstrated history of success working with numerous top colleges throughout the world, attracting students of the highest calibre and achieving favourable conversion rates from different nations.

SIG Overseas is a call that is synonymous with the aspirations of college students who're searching for possibilities to further their training overseas. They are reliable, dynamic and a success corporation that turned into founded in Melbourne, Australia in 2001 as Storm Consulting Group as a sole proprietorship and afterward emerged as SIG Overseas. Since its established order SIG Overseas has helped thousands of students to realize their educational and career goals. They are searching out enthusiastic business companions at exceptional places within the USA to sell the foreign places training, and perform underneath the steerage of SIG overseas, the knowledge developed by means of the corporation. They understand the skills possessed by success employees on your career or enterprise. They will take the time to discover you the proper man or woman and could communicate with you each step of the manner. Making the right healthy is what we do.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Cash Flow Statement Analysis of Hindustan Coca-Cola Beverages Pvt Ltd, Srikalahasthi

[1]Y. Aravind, [2]Dr. S. Kishore

[1] PG Student, Annamacharya Institution of Technology and Science, Tirupati.
[2] M. Com; Mba, Ph. D, Annamacharya Institution of Technology and Science, Tirupati

ABSTRACT

Cash flow statement is an important tool to analyse the cash position of a business firm. It can denote changes in cash position during two financial years. it also provides information about the cash receipts and the payments of a business for a given period. It provides notable information that compliments the profit and loss account and balance sheet. cash flow statement analysis is statement which provides a complete explanation for the change in a firm's cash during a particular period by specify the firm sources and uses of cash during the period from operating, investing and financing activities. It provides convenient information about an entity's activities in generating cash from operations. It informs about programme to repay debt distributed dividends or reinvest to conserve or enlarge its operating capacity. It provides information about its financing activities both debt and equity and about its investment in both fixed assets or current assets other than cash. This Article is based on the practice followed and instruction for its preparation contained in the various text books for the guidance of the students and accountants. It is hoped that the content of this Article would help the readers to understand Cash-flow statement properly.

Introduction

A cash flow statement is a financial statement that provides aggregate data regarding all cash inflows a company receives from its ongoing operations and external investment sources. It also includes all cash outflows that pay for business activities and investments during a given period.

A company's financial statements offer investors and analysts a portrait of all the transactions that go through the business, where every transaction contributes to its success. The cash flow statement is believed to be the most intuitive of all the financial statements because it follows the cash made by the business in three main ways—through operations, investment, and financing. The sum of these three segments is called net cash flow.

Cash flow statement are prepared guidance with AS-3(Accounting standards-3) of the Institute of Chartered Accountants of India (ICAI), all the registered companies whose financial year ends on march 1996 and thereafter will be required to give cash flow statement along with balance sheet and profit and loss account

Review of literature

Choong Yule (2011) Understood, analysts, cash flow forecasts have become widely available through financial services. Cash flow information enables practitioners to have a better understand the real operating performance and financial stability of a company, practically when earning information is noisy and of low quality.

Redman – (2012) Studied the impact of the different variables of working capital management Including average collection period, inventory turnovers in days , average payments and concluded cash conversion cycle on the net operating probability of rims and concluded ratio and profitability of firms.

Jeniscormier (2012) mentioned that the finance manager may use the received funds management to voluntary receives funds forecasting. Put on document of the range3 of earning management guarantee with Canadian Initial Public Offerings (IPOs) and study the scope to which firms with best corporate control systems are less likely touse achieving funds management to obtain their achieving funds estimates forecasting IPOs prospectus

Healy et al (1992) use cash flow analysis to traverse the post-merger presentation using a sample of largest 50 mergers in America industries. The results shows that the improved productivity due to mergers superior to higher cash flow returns. And the cash flow returns are appreciably positive related to abnormal stock returns at merger announcement.

Objectives of the study

- To study the cash position of business

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Theory and Practices of Capital Budgeting

T. Eswar Reddy[1], Dr. S. Kishore[2]

[1]Student, MBA Final Year, Department of MBA, Annamacharya Institute of Technology and Sciences: Tirupati.
[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology and Sciences, Tirupati.

ABSTRACT

The aim of this present paper is to review and provide a theoretical knowledge on the capital budgeting practices. Capital budgeting is the process that companies use for decision making on capital projects-projects with a life of a year or more. This is a fundamental area of knowledge for financial analysts for many reasons. Planning for capital investments can be very complex, often involving many persons inside and outside the company. Capital Planning is critical on the grounds that it makes responsibility and another was to put its assets in a undertaking without understanding the hazard and return involved would be considered as mindful by its very own investors for the more if an individual as no chance to get of exempting the viability and its speculation choices chances are that business will have minimal possibility of getting by in the aggressive commercial center.

Key Words : Cash Flows, Capital Budgeting, NPV, Capital Planning.

Introduction

Capital Budgeting is a decision process relating to long-term capital investment programmes. A sound capital budgeting decision is very critical for a firm because it is aligned with the firm's primary objective (wealth maximization), and it requires a substantial amount of resource and long-term commitment. Once the decision has been made, the process cannot be manipulated without incurring losses (Hall and Millard, 2010). Capital Planning is critical on the grounds that it makes responsibility and another was to put its assets in a undertaking without understanding the hazard and return involved would be considered as mindful by its vary own investors for the more if an individual as no chance to get of exempting the viability and its speculation choices chances are that business will have minimal possibility of getting by in the aggressive commercial center. The Indian business environment today has become highly turbulent with companies being exposed to a multitude of risks such as business cycle risk, slowdown in demand, unanticipated actions of competitors, interest rate risk, inflation rate risk, unexpected technological developments, government policy changes, and above all, exchange rate risks. In the Indian corporate sector, the use of capital budgeting techniques has shifted dramatically towards increasing adoption of sophisticated DCF techniques like NPV, IRR and advanced techniques like NPV with Real Options, MIRR and Simulation Analysis (Anand,2002; Singh et al., 2012; Verma et al., 2009). This does not disregard the usage of old NDCF techniques especially payback period method, which is still used widely as a secondary criterion (Gupta et al.,2011).

Literature Review

Leon et al. (2008) pointed out that capital budgeting is a process of evaluating and decision-making on investment projects. The authors also stated that evaluation must involve the cash flows from the proposed project considering the risk and uncertainty. Thus, care must be taken in project selection to ensure a greater probability that positive results will be made in the long run to the firm.

Garrison et al., (2018) Capital budgeting is considered an important element in the firm managerial decisions and long-term financial performance.

Rose et al., (2016) defined capital budgeting as the ways of planning and managing the firm investment in the long-term assets. Capital budgeting also plays a vital role in the firm's strategic decisions like firm expansion, asset replacement and new asset selection, cost minimization and choosing between leases or buy.

Leon et al. (2008) Capital budgeting refers to the financial assessment of the capital investment proposals of a company. In other words, capital budgeting involves assessing whether the future cash flows resulting from a suggested investment justify whether it should be made, considering the risks and uncertainties.

Ibrahim E.Ahmed (2013), study found a sizable number of UAE companies that use capital budgeting techniques in their capital investment decisions. The widely used methods are: PB, NPV, and IRR by most of the UAE companies. The study also revealed that many financial and nonfinancial factors influence the selection of capital budgeting technique such as the size of the company, revenues, profitability, leverage level, expenditure, familiarity with the project, availability of cash, and the level of education of decision makers. Significant differences were found between the methods selected and

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Study on Brand Awareness of Hindustan Coca-Cola Beverages Pvt. Ltd. Srikalahasti

[1]B. Jeevanreddy, [2]Dr. S. Kishore

[1]MBA Student, AITS, Tirupathi
[2]Asst. Professor, AITS, Tirupathi

ABSTRACT

According to theory, customers choose a brand they recognize, before an unfamiliar brand. If the consumers do not choose according to theories, what are the factors that have a greater effect on the buying behaviour There is not much research about the effect of brand awareness on brand choice, which is why this subject is investigated. One of the purposes of this paper was to do a research about brand awareness; to see to what extent it matters when purchasing the first time in an unfamiliar environment. One of the objectives was to determine if there were any differences in buying behaviour between the chosen or different cultures. The research group is limited to students from China, India and Iran. The Conclusion of research paper was that all investigated factors had some importance for choice of brand, while quality had a greater effect on brand choice than brand awareness. Further, there was no difference in buying behaviour between the cultures.

Introduction

Brand awareness is a marketing term that describes the degree of consumer recognition of a product by its name. Creating brand awareness is a key step in promoting a new product or reviving an older brand. Ideally, awareness of the brand may include the qualities that distinguish the product from its competition. **Brand awareness** is the extent to which a brand is recognized by potential customers, and is correctly associated with a particular product. Expressed usually as a percent of the taadvertising in the early months or years of a product's introduction.

Importance of brand awareness

It is a proven fact that customers prefer known brands over unknown ones. Brand awareness is that first step to make the brand known. But the importance of brand awareness doesn't end there. It is like a diamond, the more you polish, the more it'll shine.

REVIEW OF LITERATURE

A brand is an important aspect of marketing. It creates a cognitive relationship between the consumers and the products, through which emotions are created and value is derived. Physiological dimension includes the lego or the symbol that creates a long lasting impression on people's minds. Branding is a popular topic with academics and researchers who find it essential to creating new products and increasing brand awareness. A branded logo can help people develop a positive reaction to your product, which is more profitable than selling an unbranded item. The research shows that brands can increase brand awareness by showing off their logo to consumers. Brands use various strategies such as advertising and reviews to maintain their brand awareness. New products increase awareness by advertising themselves, while existing brands might instead choose attitude advertising or holding up their good image. The behavior of customers is largely influenced by the elements of their value framework. A brand's experience, class association, price and awareness level in the market are among these values. Further research has shown that brands with higher levels of awareness are more prone to be re-purchased. Brand Awareness is the extent to which a brand is recognized by potential customers, and is correctly associated with a particular product. Expressed usually as a percent of target market, brand awareness is the primary goal of advertising in the early months or years of a product's introduction.

Brand awareness is the extent to which the consumer associates the brand with the product he desires to buy. It is the brand recall and the brand recognition of the company to the consumers. Brand recall is the ability of the consumer to recollect the brand with reference to the product whereas brand recognition is the potential of the consumer to retrieve the past knowledge of the brand when enquired about the brand or shown an image of the brand logo. Brand awareness is an essential part of brand development which helps the brand to stand oyt from the others in this monopolistically competitive market importance

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Inventory Management in Sibar Autoparts Pvt. Ltd; At Renigunta

[1]James Jino, [2]Dr S. Kishore

[1]Student of MBA, Annamacharya Institute of Technology & Sciences Tirupathi
[2]Assistant Professor, Annamacharya Institute of Technology & Sciences Tirupathi

ABSTRACT

Inventory Management System is extremely useful to business owners, as they allow stores to properly shop sales and buy records. When inventory is mismanaged, it ends in disappointed clients, slower sales, an excessive amount of cash reachable, and warehouses. This inventory device reduces guide paintings, human mistake, and guide delays at the same time as simultaneously speeding up the system. This inventory control device may be capable of song income records in addition to inventories. Inventory control machine is a web utility for Windows that focuses on inventory and sales clearance. It become created for Windows working structures. The stock management system has some of capabilities. This web software has logical tools for evaluating ideal inventory stages and deciding on the correct replenishment techniques automatically. It also has competencies like the capacity to pick out stock stages, compute reorder points routinely, and spotlight ability inventory-outs. This method removes the danger of stock-outs of fast-transferring items by means of minimizing delays.

Index Terms: Inventory Management System, tune sales, income clearance, time saving, warehouse, inventory.

INTRODUCTION

Inventory in wider experience, is defined as any idle aid of an employer. It is a bodily inventory of products debt for the motive of future affairs. The time period is usually used to signify uncooked materials in method, completed merchandise, packing, spares and others – stocked in order in meet anticipated call for or distribution within the future. Though stock of substances in an idle resource – it isn't intended for fast use – it is almost vital to keep a few inventories for the easy functioning of an agency.

For instance, let us don't forget an company that has no stock of substances in any respect. When this corporation gets a income order, it'll need to order out the uncooked cloth required to complete the order, wait till these arrive after which start production. This could hold the customers invariably to attend too lengthy for the delivery of the goods ordered. Among different negative aspects of not variably to attend too lengthy for the transport of the products ordered.

Definition of inventory management

Inventory is a list for items and materials, or those items and substances themselves, held available in stock by a business. It is also used for a listing of the contents of a family and for a list for testamentary functions of the possessions of someone who has died.

The formal control of the timing and portions of goods to be ordered and stocked via an organization in order that demand can continually be satisfied without extra expenditure.

Treats inventories, as “Locked, up capital”. Inventory measured by rupee value constitutes the important detail inside the “Working Capital” (about 60% of contemporary assets).

- John Hampton

“Good stock management is not anything but desirable financial control”

-S.C. Kuchal

Review of literature

Inventory management is considered as main concerns of each organisation. In inventory holding, many steps are taken by managers that end result a cost concerned on this row. This fee might not be steady in nature in the course of time horizon in which perishable stock is held. To inspect on any such case, Taygi (2014) proposes an optimization of inventory model wherein items become worse in inventory conditions.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Inventory Management System – with Special Reference to Indian Steel Industry

B.Lava Kumar Reddy[1], Dr.S.Kishore[2]

[1]Student, II MBA , Department of MBA, Annamacharya Institute of Technologyand Sciences: Tirupati., e-mail :lavakumarreddy230@gmail.com
[2]Associate Professor, Department of MBA, Annamacharya Institute of Technology and Sciences, Tirupati.e-mail: kishore.mbaaitstpt@gmail.com

ABSTRACT

The purpose of this research paper is to look at the inventory management system in steel industry. Inventory management is a method of organizing, storing, and utilizing inventories. The significance of this studies is primarily based at the benefits that may be obtained by using figuring out the problems of stock manipulate. The techniques used are unstructured interviews, on-website online look at, and annual record analysis. Inventory control is an critical place of manufacturing industry. If it is a project for the enterprise to hold fair stock. There are various inventory control strategies to be had for maintaining honest inventory level inside the business enterprise. The primary goal of this paper is to have a look at approximately inventory control techniques used in electro steel castings ltd. And find out some measures for improvement on inventory management technique of the worried enterprise. The present gadget of inventory management of the business enterprise is good. For development of the prevailing stock control system, corporation should adopt other stock management

Key Words : Inventory, EOQ, Stock Management, Steel Industry.

Introduction

Inventory in wider experience, is defined as any idle aid of a corporation. It is a physical inventory of products saved dept. For the reason of future affairs. The term is normally used to signify uncooked materials in manner, finished products, packing, spares and others – stocked as a way to meet predicted call for or distribution inside the future. Though inventory of substances is an idle resource it is not meant for immediate use it's miles nearly vital to hold a few inventories for the clean functioning of an company.The inventory itself has many definitions according to different people and party, top management uses different terms as well to describe the same idea. An inventory is actually a list of the items held in stock, but many people use it to mean both the list of items and the stocks themselves (Waters, 2017). Inventory is defined as a list of goods and materials which are available in stock for business and in accounting inventory is considered as an asset (A. Sharma, 2016). An inventory managers goal, for example, is modeled as minimizing cost or maximizing profit while satisfying customers' demands (Koumanakos, 2008). Inventory management is always about optimizing the inventory to achieve good firm performance, increase, and effectiveness and increase efficiency. Poor inventory management in production floor will cause excess or shortages of raw material which indirectly impact business performance of the company (Ooi, 2017). Management of perishable inventories is an important issue due to the need of satisfying unpredictable consumers' demand with limited supplier capabilities and storage space (Latosinski, 2017). Justified by Angel (2014), an effective inventory management must consist of six main criteria, make sure that there is an uninterrupted supply of raw materials to enable uninterrupted production process, keep enough finished manufactured goods for uninterrupted sales transactions and proficient service to customers, reduce the holding cost and period, manage assets and keep it at the best level, allow improved utilization of on hand stocks by simplifying interdepartmental handovers within a company and lastly keep enough stocks of raw materials in periods of shortage in supply and expected price increases.

The importance of inventory management

A retail business is useless without its inventory. And so while it may not be the most exciting subject, inventory management is vitally important to your business's longevity. Good inventory management helps with:

1. Customer experience. Not having enough stock to fulfill orders you've already taken payment for can be a real negative.
2. Improving cash flow. Putting cash into too much inventory at once means it's not available for other things - like payroll or marketing.
3. Avoiding shrinkage. Purchasing too much of the wrong inventory and/or not storing it correctly can lead to it becoming 'dead', spoiled, or stolen.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

Factors Influencing the Selection of Capital Budgeting Method

[1] T. Sai Ram, [2] Dr. S. Kishore

[1]Student, MBA, Department of MBA, Annamacharya Institute of Technology and Sciences: Tirupati.
[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology and Sciences, Tirupati.

ABSTRACT

Capital budgeting practices are the most vital component of financial management. Majority of the studies investigating capital budgeting practices among surveyed firms are from developed economics. Capital budgeting method can be categorized into two groups: discounted cash flow (DCF) method and non-discounted cash flow (non-DCF) methods. Non-DCFs include payback method (PBM) and accounting rate of return (ARR). DCFs include net present value (NPV), internal rate of return (IRR), discounted payback method and profitability index (PI). While DCFs take into account the time value of money, the non-discounted methods are not considered time value of money. Selection of capital budgeting techniques can be influenced by both the financial and nonfinancial factors. The purpose of the study is to provide the theoretical knowledge on the factors that are influencing the selection of capital budgeting method in domestic and multinational decisions.

Key Words: Capital Budgeting, DCF, Capital Planning. MNCs

Introduction

A firm incurs two types of expenses i.e., Revenue Expenditure and Capital Expenditure. The benefits of which are supposed to be exhausted within the year concerned and their planning and control is done through various functional departments and the Capital Expenditure is that the benefits of which are expected to be received over long period a series of years in future like building, plant, machinery or to undertake a program on Research and development of a product, Diversification in to a new product line, Replacement of a machine, Expansion in production capacity and Promotional campaign.

Capital expenditure involves investment of substantial funds for longer period and the benefits of such investment are in the form of increasing revenues or decreasing costs. Wrong decision under this head may effect future earnings, employment capacity, quantity and quality of production. Hence, long term planning and right decision to incur or not to incur such expenditure is a crucial responsibility of management. The techniques used by management to carry out this responsibility is known as capital budgeting. Hence planning and control of capital expenditure is termed as capital budgeting.

"**Capital budgeting** (also known as investment appraisal) is the process by which a company determines whether projects (such as investing in R&D, opening a new branch, replacing a machine) are worth pursuing. A project is worth pursuing if it increases the value of the company". In general a project typically does add a value to a company if it earns the expected return of the project which is greater than the cost of that project. Expected rate of return is known as the opportunity cost of any project. While capital budgeting is a fairly straightforward process from a conceptual viewpoint, it can be very challenging in practice. Not only is it difficult to determine the group's appropriate cost of capital, it is often even trickier to accurately forecast the incremental cash flows that result from taking on the project.

Objectives of Capital Budgeting

Following are the objectives of capital budgeting;

Shareholder's wealth maximization: In tune with objectives of financial management, its aim is selecting those projects that maximize shareholder's wealth. The decision should avoid over/under investment in fixed assets.

Evaluation of proposed capital expenditure: Capital budgeting helps in evaluating expenditure to be incurred on various assets to measure validity of each expenditure.

Controlling costs: Controlling costs by evaluating expenditure costs can be controlled.

Determining priority: Arranging projects in order of their profitability enabling the management to select most profitable project.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Customer Relationship Management at Yamaha Motors, R.K. Enterprises, Tirupati, Andhra Pradesh

G.Vinod Reddy[1], Dr.S.Kishore[2]

[1]Student, II MBA , Department of MBA, Annamacharya Institute of Technologyand Sciences: Tirupati.Email: ,vinodreddy9110@gmail.com
[2]Associate Professor, Department of MBA, Annamacharya Institute of Technology and Sciences, Tirupati.e-mail: kishore.mbaaitstpt@gmail.com

ABSTRACT

The aim of the research paper is to find the Customer Relationship Management towards Yamaha Motors in Tirupati. Customer relationship is a tool for identifying way to create more customer value& satisfaction. Every firm is a synthesis of activities that are performed to design, produce, and market, deliver and support its product. Many companies are intent on developing stronger bonds with their customers called Customer Relationship Management (CRM). This is the process of managing detailed information about individual customer and carefully managing all the customers touch points with aim of maximizing customer loyalty.A successful business must have satisfied customers. We will treat them as we would wish to be treated ourselves. They require an excellent service and our use therefore be undertaken with our customers as the key focus.Providing better products and services then our competitors. The aim of customer relationship management is to produce high customer equity. Customer equity is the total of discounted lifetime values of all of the firm's customers. Clearly, the more loyal customer, the higher the customer equity, rust, zenithally, and lemon distinguish three drivers of customer equity; value equity, brand equity, and relationship equity.

Key Words :CRM, LPG, SWOT Analysis, Customer Loyalty

Introduction

The ever going competition in the world economy, the organisations focuses lot of challenges for the development and services in the marketing. The waves of Liberalisation, Privatisation, and Globalisation (LPG) are sweeping across the world. Those who talked about 'market failure' and 'exclusion of the poor by the market' is now advocating a greater role for the market forces and market friendly economy by providing lot of opportunities, development and survival of an organisations turnaround the customer's op. cit., retaining the customers is too difficult rather than attracting new customers. It is mainly depends effective existence of a fair Customer Relationship Management (CRM). CRM is determined in advance with the anticipation it will be an ongoing relationship based on multiple transactions. Thus in the present day competitive market CRM plays an important role in the development of a stability of an enterprises.

The effective use of information is to be the foundation of competitive firms in this millennium. Since the beginning of the new millennium, traditional marketing practices have not been effective in yielding good returns. Companies have turned reluctant to spend huge advertising expenditure and marketing research – the potent tool of getting deeper insights of customer has lost its charisma. The four P's of marketing – Price, Product, Place and Promotion – are not much useful in developing marketing strategies. Due to enigmatic customer behaviour, it becomes inevitable for the companies to develop new marketing strategies. CRM has emerged as a new marketing strategy in that tenor. As a new marketing strategy in that tenor.

There is a gradual shift in marketing practices from basic marketing to relative marketing and then to relationship marketing. In days of a long time ago, selling a product was comparatively easy. Many companies took their customers for granted and could practice of marketing in expanding economies and rapidly growing markets. Owing to changing demographics, fierce competition and over-capacity in many industries, most companies are up against the problem of customer churn, that is, customer defection. It has become imperative for every company to fight for its share in the flat or faded market. They also realized that customer is the king or queen and retaining an existing customer is less expensive than creating a new customer for their products. Jeetendra Jain says, "It costs 5 times less to retain an existing customer than to acquire a new one".

CRM – Principles, strategies, solutions, applications, systems, software, and ideas for effective customer relationship management

Customer Relationship Management is an essential part of modern business management. This CRM article is provided by Ellen Gifford, who

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Ratio Analysis of Bajaj Finserv with Reference to Srirambajaj, Tirupati

[1]P. Bhaskar Yadav, [2]Dr. K. Haritha

[1]Student, MBA II Year, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati
[2]Associate Professor & HOD, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati

ABSTRACT:

Ratio analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the items of the balance sheet and the profit and loss account. Financial analysis can be undertaken by management of the firm, or by parties outside the firm, viz. Owners, creditors, investors and others. The nature of analysis will differ depending on the purpose of the analyst. This study explains the importance of ratio analysis and study of ratio analysis of bajaj finserv.

Keywords: Ratio analysis**,** current ratio, net profit ratio

Introduction

Ratio analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationships between the items of the balance sheet and the profit and loss account. Financial analysis can be undertaken by management of the firm, or by parties outside the firm, viz. Owners, creditors, investors and others. The nature of analysis will differ depending on the purpose of the analyst.

Ratio analysis is in respect of the following aspects;

I. Liquidity position
II. Long-term solvency
III. Operating efficiency
IV. Overall profitability
V. Inter-firm comparison
VI. Financial ratios for supporting budgeting

Several ratios, calculated from the accounting data, can be grouped into various classes. According to financial activity or function to be evaluated. The parties interested in financial analysis are short-term and long-term creditors, owners and management. Short- Term creditors main interest in the liquidity position or the short-term solvency of the Firm. Long-term solvenacy and profitability of the firm. Similarly, owners concentrate on the firm's profitability and financial condition. Management is interested in evaluating every aspect of the firm's performance. They have to protect the interests of all parties and see that the firm grows profitability.

In view of the requirements of the various users of ratios, we may classify them into the following four important categories:

1. Liquidity Ratios
2. Leverage Ratios
3. Activity Ratios
4. Profitability Ratios

Absolute figures expressed in monetary terms in financial statements themselves are meaningless. These figures often do not convey much meaning unless expressed in relation to other figures. Thus, we can say that the relationship between two figures expressed in arithmetical terms is called a 'ratio'.

Advantages of Ratio Analysis

Financial statements i.e. Profit & loss account & Balance sheet prepared at the end of the year do not always convey to the reader the real profitability & financial health of the business. They contain various facts & figures & it is for the reader to conclude, whether these facts indicate a good or bad

International Journal of Research in Engineering and Science (IJRES)
ISSN (Online): 2320-9364, ISSN (Print): 2320-9356
www.ijres.org Volume 10 Issue 9 ǁ September 2022 ǁ PP. 535-538

A Study on Customer Satsifaction Towords Bsnl, Tirupati.

*N.SHAHIL RATHOD **Dr.K.HARITHA.

** Student, MBA II Year, Department of MBA, Annamacharya Institute of Technology & Sciences:: Tirupati (Autonomous),*

*** Associate Professor & HOD, Department of MBA, Annamacharya Institute of Technology & Sciences:: Tirupati (Autonomous)*

Abstract: *Customer satisfaction, a business term, is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator within business and is part of the four perspectives of a Balanced Scorecard. In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy. Customer satisfaction is an ambiguous and abstract concept and the actual manifestation of the state of satisfaction will vary from person to person and product/service to product/service. The state of satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as return and recommend rate. This present study covers the customer satsifaction of bsnl customers in Tirupati region.*

Keywords: *Customer satisfaction, Awareness level of customers.*

Date of Submission: 10-09-2022 Date of acceptance: 25-09-2022

I. INTRODUCTION:

Customer satisfaction, a business term, is a measure of how products and services supplied by a company meet or surpass customer expectation. It is seen as a key performance indicator within business and is part of the four perspectives of a Balanced Scorecard.

In a competitive marketplace where businesses compete for customers, customer satisfaction is seen as a key differentiator and increasingly has become a key element of business strategy

Measuring customer satisfaction

Organizations are increasingly interested in retaining existing customers while targeting non-customers, measuring customer satisfaction provides an indication of how successful the organization is at providing products and/or services to the marketplace.

Customer satisfaction is an ambiguous and abstract concept and the actual manifestation of the state of satisfaction will vary from person to person and product/service to product/service. The state of satisfaction depends on a number of both psychological and physical variables which correlate with satisfaction behaviors such as return and recommend rate. The level of satisfaction can also vary depending on other options the customer may have and other products against which the customer can compare the organization's products.

Because satisfaction is basically a psychological state, care should be taken in the effort of quantitative measurement, although a large quantity of research in this area has recently been developed. Work done by Berry, Brodeur between 1990 and 1998 defined ten 'Quality Values' which influence satisfaction behavior, further expanded by Berry in 2002 and known as the ten domains of satisfaction. These ten domains of satisfaction include: Quality, Value, Timeliness, Efficiency, Ease of Access, Environment, Inter-departmental Teamwork, Front line Service Behaviors, Commitment to the Customer and Innovation. These factors are emphasized for continuous improvement and organizational change measurement and are most often utilized to develop the architecture for satisfaction

Measurement as an integrated model. Work done by Parasuraman, Zeithaml and Berry between 1985 and 1988 provides the basis for the measurement of customer satisfaction with a service by using the gap between the customer's expectation of performance and their perceived experience of performance. This provides the measurer with a satisfaction "gap" which is objective and quantitative in nature. Work done by Cronin and Taylor propose the "confirmation/disconfirmation" theory of combining the "gap" described by Parasuraman, Zeithaml and Berry as two different measures (perception and expectation of performance) into a single measurement of performance according to expectation. According to Garbrand, customer satisfaction equals perception of performance divided by expectation of performance.

The usual measures of customer satisfaction involve a survey with a set of statements using a Likert Technique or scale. The customer is asked to evaluate each statement and in term of their perception and expectation of the performance of the organization being measured.

International Journal of Research in Engineering and Science (IJRES)
ISSN (Online): 2320-9364, ISSN (Print): 2320-9356
www.ijres.org Volume 10 Issue 9 ǁ September 2022 ǁ PP. 552-556

A Study on Cash Flow Analysis in Vital Pvt Ltd, Tada

*Y.Narendra **Dr.K.Haritha
** Student, MBA II Year, Department of MBA, Annamacharya Institute of Technology & Sciences:: Tirupati (Autonomous),*
*** Associate Professor & HOD, Department of MBA, Annamacharya Institute of Technology & Sciences:: Tirupati (Autonomous),*

Abstract:
Cash flow statement is an important tool to analyse the cash position of a business firm. Cash flow statement reveals the causes of changes in cash position of business concern between two dates of balance sheet. According to Accounting Standard – 3 (Revised) an enterprise should prepare a cash flow statement and should present it for each period with financial statements prepared. Accounting Standard – 3 (Revised) has also given the meaning of the words cash, cash equivalent and cash flows. This study explain the importance of cash flow statement and it covers the operating, investing and financing activities of the company.It is hoped that the content of this Article would help the readers to understand Cash-flow statement properly.
Keywords*: Cash operating activities, investing activities, financial activities.*

Date of Submission: 10-09-2022 Date of acceptance: 25-09-2022

I. Introduction:

In financial accounting, a cash flow statement also known as statement of cash flows, is a financial statement that shows how changes in balance sheet accounts and income affect cash and cash equivalents, and breaks the analysis down to operating, investing and financing activities. Essentially, the cash flow statement is concerned with the flow of cash in and out of the business. As an analytical tool, the statement of cash flows is useful in determining the short-term viability of a company, particularly its ability to pay bills. International Accounting Standard 7 (IAS7) is the International Accounting Standard that deals with cash flow statement.

Cash flow statement reveals the causes of changes in cash position of business concern between two dates of balance sheet. According to Accounting Standard – 3 (Revised) an enterprise should prepare a cash flow statement and should present it for each period with financial statements prepared. Accounting Standard – 3 (Revised) has also given the meaning of the words cash, cash equivalent and cash flows.

Cash: This includes cash on hand and demand deposits with banks

Cash equivalents: This includes purely short term and highly liquid investments which are readily convertible into cash and which are subject to an insignificant risk of changes in value

Cash flows: This includes inflows and outflows of cash and cash equivalents. If the effect of transaction results in the increase of cash and its equivalents, it is called an inflow (source) and if it results in the decrease of total cash, it is known as outflow (use cash of) In financial accounting, a cash flow statement also known as statement of cash flows. It is a financial statement that shows how changes in balance sheet accounts and income affect cash and cash equivalents and breaks the analysis down to operating, investing and financing activities. Essentially, the cash flow statement is concerned with the flow of cash in and out of the business. As an analytical tool, the statement of cash flow is useful in determining the short-term viability of a company, particularly its ability to pay bills. International Accounting Standard 7 (IAS7) is the International Accounting Standard that deals with cash flow statements.

According to Accounting Standard – 3 (Revised) cash flows are classified into three main categories:

1. Cash flows from operating activities
2. Cash flows from investing activities
3. Cash flows from financing activities

1. **Cash flows from operating activities:**

Operating activities are the principal revenue – producing activities of the enterprise and other activities that are not investing or financing activities. The amount of cash flows arising from operating activities is a key indicator of the extent to which the operations of the enterprise have generated sufficient cash flows to maintain the operating capability of the enterprise, pay dividends, repay loans and make new investments without recourse to external sources of financing.

a. Cash receipts from royalties, fees, commissions and other revenue

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Working Capital in Bajaj Finserv with Reference to Sri Ram Bajaj, Tirupati

[1]P. Pavan Kalyan, [2]Dr. K. Haritha

[1]Student, MBA II Year, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati
[2]Associate Professor & HOD, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati.

ABSTRACT:

Working capital means the part of the total assets of the business that change from one form to another form in the ordinary course of business operations. In a perfect world, there would be no necessity for current assets and liabilities because there would be no uncertainty, no transaction costs, information search costs, scheduling costs, or production and technology constraints. The unit cost of production would not vary with the quantity produced. Borrowing and lending rates shall be same. Capital, labour, and product market shall be perfectly competitive and would reflect all available information, thus in such an environment, there would be no advantage for investing in short term assets. However the world we live is not perfect. It is characterized by considerable amount of uncertainty regarding the demand, market price, quality and availability of own products and those of suppliers. There are transaction costs for purchasing or selling goods or securities. Information is costly to obtain and is not equally distributed. The present study covers the working capital management of Bajaj Finserv with special reference to Sriram Bajaj, Tirupati.

Keywords: Working capital, Current Ratio, Quick ratio.

Introduction:

"Working capital means the part of the total assets of the business that change from one form to another form in the ordinary course of business operations."

In a perfect world, there would be no necessity for current assets and liabilities because there would be no uncertainty, no transaction costs, information search costs, scheduling costs, or production and technology constraints. The unit cost of production would not vary with the quantity produced. Borrowing and lending rates shall be same. Capital, labour, and product market shall be perfectly competitive and would reflect all available information, thus in such an environment, there would be no advantage for investing in short term assets. However the world we live is not perfect. It is characterized by considerable amount of uncertainty regarding the demand, market price, quality and availability of own products and those of suppliers. There are transaction costs for purchasing or selling goods or securities. Information is costly to obtain and is not equally distributed.

There are spreads between the borrowings and lending rates for investments and financings of equal risks. Similarly each organization is faced with its own limits on the production capacity and technologies it can employ there are fixed as well as variable costs associated with production goods. In other words, the markets in which real firm operated are not perfectly competitive. These real world circumstances introduce problem's which require the necessity of maintaining working capital. For example,, an organization may be faced with an uncertainty regarding availability of sufficient quantity of crucial imputes in future at reasonable price. This may necessitate the holding of inventory, current assets. Similarly an organization may be faced with an uncertainty regarding the level of its future cash flows and insufficient amount of cash may incur substantial costs. This may necessitate the holding of reserve of short term marketable securities, again a short term capital asset. In corporate financial management, the term Working capital management" (net) represents the excess of current assets over current liabilities.

Working capital may be regarded as the life blood of business. Working capital is of major importance to internal and external analysis because of its close relationship with the current day-to-day operations of a business. Every business needs funds for two purposes

- Long term funds are required to create production facilities through purchase of fixed assets such as plants, machineries, lands, buildings & etc
- Short term funds are required for the purchase of raw materials, payment of wages, and other day-to-day expenses. It is otherwise known as revolving or circulating capital

Working Capital = Current Asset – Current Liability

- Working capital is the difference between the inflow and outflow of funds. In other words it is the net cash inflow.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Performance Evaluation of Selected Mutual funds with special reference to ICICI Prudential Mutual Fund , Tirupati

T.Thriloknath Reddy, ****Dr.K.Haritha

* Student, MBA II Year, Department of MBA, Annamacharya Institute of Technology & Sciences:: Tirupati (Autonomous), 9100739382, thrilokreddy461@gmail.com

** Associate Professor & HOD, Department of MBA, Annamacharya Institute of Technology & Sciences:: Tirupati (Autonomous), 9908538083, dr.k.harithanaidu@gmail.com

ABSTRACT:

A mutual fund is a pool of money, which collected from many investors and is invested by an asset management company to achieve some common objectives of the investors. Thus, a mutual fund is a collective investment process. An Asset management company (AMC) collects many investors money. The manager uses the money to buy stocks, bonds and other securities according to specific investment objective that have been established for the fund. In return of the investment, the investors are given units for that fund. The investments range from shares to debentures to money market instruments. Each mutual fund with different type of schemes is managed by respective asset management company (AMC). An investor can invest his money in one or more schemes depending upon his choice. The income earned by the investor and the capital appreciation realized by the scheme is shared by the unit holders in proportion to the number of units held by him. This mutual fund is a best investment option for a common investor as it offers an opportunity to invest in a diversified, professionally managed portfolio at a relatively lower cost. This study covers the performance evaluation of selected mutual funds with respect to ICICI, Tirupati.

Keywords: Mutual funds, Sharpe's Ratio, Treynor Ratio

INTRODUCTION:

It is the price at which a close-ended scheme repurchases its units and it may include a back-end load. This is also called Bid Price.

MUTUAL FUNDS:

According Mr.James pierce- "the mutual fund is an important vehicle for bringing wealth holders and deficit units together indirectly."
According to SEBI (mutual fund) regulations 1993,"mutual fund means a fund established in the form of trust by sponsor to raise moneys by the trustees through the sale of units to the public under one public one or more schemes for investing in securities in accordance with these regulations".
A mutual fund is a pool of money, which collected from many investors and is invested by an asset management company to achieve some common objectives of the investors. Thus, a mutual fund is a collective investment process. An Asset management company (AMC) collects many investors money. The manager uses the money to buy stocks, bonds and other securities according to specific investment objective that have been established for the fund. In return of the investment, the investors are given units for that fund. The investments range from shares to debentures to money market instruments. Each mutual fund with different type of schemes is managed by respective asset management company (AMC). An investor can invest his money in one or more schemes depending upon his choice. The income earned by the investor and the capital appreciation realized by the scheme is shared by the unit holders in proportion to the number of units held by him. This mutual fund is a best investment option for a common investor as it offers an opportunity to invest in a diversified, professionally managed portfolio at a relatively lower cost.

a trust . it pools money from A mutual fund is like – minded unit holders and invests in diversified portfolio of securities through various schemes that address different needs of investors . the pool of money thus collected is then invested by the asset management company (AMC) in different types of securities. These could include shares, debentures, convertibles, bonds, money market instrument of other securities based on the investment objective of a particular scheme. Such objective is clearly laid down in the offer document for that scheme. The fund adds value to the investment in two ways: income earned and any capital appreciation realized through sale this is shared by unit holders in proportion to investors. Mutual funds also offer good investment opportunities to the investors. Like all investments they also carry certain risks. The investors should compare the risks and expected yields after adjustment of tax on various instruments while taking investment decisions. The investors may seek advice from experts and consultants including agents and distributors of mutual funds schemes while making investment decisions.

With an objective to make the investors aware of functioning of mutual funds an attempt has been made to provide information in question – answer format which may help the investors in taking investment decisions.

Till 1986 the unit trust of India was the only mutual fund in India offering a small number of schemes. As the mutual fund sector was

International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 6 Issue 6, September-October 2022 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

A Study on Funds Flow Analysis of Vital Pvt. Ltd., Tada

R. Yugandhar[1], Dr. K. Haritha[2]

[1]Student, [2]Associate Professor & HOD,

[1,2]Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati, Andhra Pradesh, India

ABSTRACT

Finance is the lifeblood of every business activity without which the wheels of modern business organization system cannot be greased. Finance management is managerial activity, which is concerned with planning and controlling of the firm's financial Resources. Finance is a scarce resource and it has to be managed efficiency for the successful functioning of any company. Several companies have come to grief mainly because of inefficient management of finance, in spite of other favourable conditions. This study explains the funds flow statement analysis of vital pvt. Ltd., Tada.

KEYWORDS: *Funds Flow Analysis, working capital, financial position*

How to cite this paper: R. Yugandhar | Dr. K. Haritha "A Study on Funds Flow Analysis of Vital Pvt. Ltd., Tada" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-6 | Issue-6, October 2022, pp.1131-1135, URL: www.ijtsrd.com/papers/ijtsrd52025.pdf

IJTSRD52025

INTRODUCTION

Finance is the lifeblood of every business activity without which the wheels of modern business organization system cannot be greased. Finance management is managerial activity, which is concerned with planning and controlling of the firm's financial Resources. Finance is a scarce resource and it has to be managed efficiency for the successful functioning of any company. Several companies have come to grief mainly because of inefficient management of finance, in spite of other favourable conditions.

The funds flow statement is a statement which shows the movement of funds and is a report of financial operations of the business undertaking. It indicates various means by which funds were obtained during a particular period and the ways in which these funds were employed. In simple words it is a statement of sources and applications of funds.

The funds flow is designed to analyze the changers in the financial condition of a company between two periods. This statement will highlights the sources from which funds are received and the uses to which these have been put and it enables to know with reasons the basic causes of changes in net working capital. This statement is also termed as "Statement of changes in the financial position on working capital basis".

Funds flow statement is an important tool and is widely used in the hands of financial analysts and managers for analyzing the financial management of a company. Funds keep on moving in a business, which itself based on going concern concept. In a narrow sense, it means inflow and out flow of cash only and a flow statement prepared on this basis is called as "cash flow statement".

Definition:

"A statement of sources and Application of Funds is a technical device designed to analyze the changes in the financial condition of a business enterprise between two dates".

----R. A. Foulk

Uses-of Funds Flow Analysis:

It helps in the analysis of financial operations.

It throws light on many perplexing questions of general interest.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Ratio Analysis in Dora Plastics Pvt Ltd, Renigunta

[1]N. Guru Madhan Mohan, [2]E. Kusuma

[1]Student, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati.
[2]Assistant Professor, Annamacharya Institute of Technology & Sciences,Tirupati.

ABSTRACT: -

The aim of the study is to analysis the ratio analysis to know the financial position of the company using the financial tools. This study based on financial tools such as ratio analysis. By using this tool combined it enables to determine in an effective manner. This research helps to identify and give suggestion the area of weaker position of business transactions in the company. This research is made to assess the ratio analysis as per trend analysis.

Introduction: -

Ratio analysis is the powerful tool of the financial analysis. As stated in the beginning, many diverse groups of people are interested in analyzing the financial information to indicate the operating and financial efficiency, and growth of the firm. These people use ratios to determine those financial characteristics of the firm in which they are interested. With the help of ratios, one can determine:

- The ability of the firm to meet its current obligations.
- The efficiency with which the firm is utilizing its assets in generating sales revenue.

Classification of ratios:

So many ratios, calculated from the accounting data can be grouped into various according to financial activity (or) function to be evaluated. The parties interested in financial analysis are short and long creditors, owners, and management. Short – term creditor's main interest is in the liquidity position or the short –term solvency of the firm.

- Liquidity ratios
- Leverage ratios
- Activity ratios
- Profitability ratios

Liquidity ratios measure the firm's ability to meet current obligations; leverage ratios show the proportions of debt and equity in financing the firm's efficiency in utilizing its assets and profitability ratios measure overall performance and effectiveness of the firm. Each of these ratios are discussed below:

Similarly, owners concentrate on the firm's performance. They must protect the interest of all parties and see that the firm grows profitability. In view of the requirements of the various users of ratios. We may classify them in to the following four important categories.

Methodology of the study: -

Secondary Data: -

The secondary data are those, which have been collected by someone Else and which have already been processed.

Need of the study: -

The subject matter of financial is of immense interest for every financial analyzer. It needs special attention because of the complexities involve in managing cash in present day industrial function, The important aspect is the estimation of how much of finance. Ratio analysis has been taken as a tool in assessing the performance of the company in respect the liquidity position.

International Journal of Trend in Scientific Research and Development (IJTSRD)
Volume 6 Issue 6, September-October 2022 Available Online: www.ijtsrd.com e-ISSN: 2456 – 6470

A Study on Recruitment & Selection Process in Amara Raja Power Systems Ltd, Tirupati

D. Indu[1], E. Kusuma[2]

[1]Student, [2]Assistant Professor,
[1,2]Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati, Andhra Pradesh, India

ABSTRACT

The human resources are the foremost important assets of an organization. The success or failure of a corporation is largely dependent on the caliber of the people working there in. Without positive and artistic contributions from people, organizations cannot progress and prosper to achieve the goals or the activities of an organization, therefore, they have to recruit people with requisite skills, qualifications and knowledge. A good recruitment & selection process increases organizational outcomes. The human resources department plays a vital role in recruitment & selection process. Because they find the effective candidates for the organization. The main objective of this study is to know the management policies and HR practices While selecting the right candidates for right positions in the company. This study mainly focus on the recruitment and selection process in Amara Raja power systems ltd. Data analysis is done with statistical tools like percentage & column charts analysis and tables.

KEYWORDS: *Recruitment, Selection, Human Resources*

How to cite this paper: D. Indu | E. Kusuma "A Study on Recruitment & Selection Process in Amara Raja Power Systems Ltd, Tirupati" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-6 | Issue-6, October 2022, pp.1066-1068, URL: www.ijtsrd.com/papers/ijtsrd52016.pdf

IJTSRD52016

INTRODUCTION

The human resources are the foremost important assets of an organization. The success or failure of a corporation is largely dependent on the caliber of the people working there in. Without positive and artistic contributions from people, organizations cannot progress and prosper. so as to achieve the goals or the activities of an organization, therefore, they have to recruit people with requisite skills, qualifications and knowledge. While doing so, they need to keep the present as well as the future requirements of the organization in mind. The recruitment and selection is that the major function of the human resource department and recruitment process is the first step towards creating the competitive strength and the recruitment strategic advantage for the organizations.

Recruitment process is searching the candidates for employment and stimulating them to apply for jobs in the organization". Recruitment activity is about links between the employers and the job seekers.

- Edwin. B. Flippo

Selection is a process of finding and placing the capable candidates for employment, it begins when new recruits are select and ends when their applications are approved. The pool of applications from which new employees are selected.

Review Of Literature:

(Othman et al. 2019)

Recruitment is defind set of general activites for an organization to catch the attention of job applicants that candidates abilities needed to help the company to achieve the goals & objectives.

(Khan & Abdullah,2019)

According to Khan & abdhullah, HR department responsible for to find the candidate for right position.

Objectives of the study:

- To know the recruitment and selection process in Amara Raja Power Systems Limited, Tirupati
- To study the management policies in recruitment and selection.
- To know the methods by which potential candidates are communicated about the vacancies.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Capital Budgeting in Hindustan Coca - Cola Beverages (Pvt) Ltd., at Srikalahasti

***P. Munisekhar, ****E. Kusuma MBA**

*Student, MBA 2nd year, Department of MBA, Annamacharya Institute of Technology & Sciences: Tirupati.,
Email :**peralamunisekhar@gmail.com**
**Assistant professor Department of MBA, Annamacharya Institute of Technology & Sciences: Tirupati.

ABSTRACT:

Capital budgeting is a step-by-step process that businesses use to determine the viable of an investment proposal. The decision of whether to accept or not accept an investment project as part of a company's growth initiatives, involves determining the investment required rate of return that such a project will generate positive cashflows.As per the project data is concerned, it is concluded that the payback period of the project is good and which is get returned with in standard payback period of 4 years. And also, capital invested is getting more return which is greater than the company policy.

Key words: Capital budgeting, Investment Proposal

Introduction: -

The time period Capital Budgeting refers to long term planning for proposed capital outlay and their financing. It includes raising lengthy-time period finances and their utilization. It may be described as a company's formal system of acquisition and funding of capital.
Capital Budgeting May also be defined as "The selection making manner through which a firm evaluates the purchase of principal constant belongings. It involves firm's choice to make investments its cutting-edge finances for addition, disposition, amendment and substitute of fixed assets.
The position of a finance supervisor inside the capital budgeting basically lies inside the system of severely and in-intensity analysis and evaluation of numerous alternative proposals after which to pick out one out of these.

Need of the study: -

Capital Budgeting means planning for capital assets. Capital Budgeting decision are vital to an organization as to include the decision as funds should be invested in long term projects such as purchase of plant and machinery etc., and analyze the proposals for expansion or creating additions capacities. To make financial analysis of various proposals regarding capital investment so as to choose the best out of many alternative proposals.

Scope of the study: -

The scope of the study is to understand the importance of the capital budgeting decisions in Hindustan Coca-Cola beverages private limited at Srikalahasti, evaluating investment proposal of setting up facilities at Hindustan Coca-Cola beverages private limited at Srikalahasti, and explain the principles of the investment and financing decisions.

Objectives of the study: -

- To analyze and asses the financial viability of the investment proposal using the methods of capital budgeting.
- To assess the effectiveness of long-term investment decisions of Hindustan Coca-Cola beverages private limited at Srikalahasti.
- To evaluate the capital budgeting practices relating to investment activities of Hindustan Coca-Cola beverages private limited at Srikalahasti.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Training and Development in Electrosteel Castings Limited, Srikalahasti.

[1]V. Rakesh, [2]E. Kusuma

[1]Student, Department of MBA, Annamacharya Institute of Technology & Sciences: Tirupati
[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology & Sciences: Tirupati

ABSTRACT:

Training is important for every employee in industries. As such, metallic. Industries also are providing schooling to their workers. Systematic schooling begins with the evaluation of anticipated abilities on the paintings and process, present skills a few of the employees, choice of right technique of training, period of schooling, and so forth. In the recognize, the present observe cantered specific components of training and improvement activities of Pig Iron industries positioned in Srikalahasti via surveying six hundred employees through interview time table. The paper defined the effects of the look at.

Key words: - Training, development, Employees.

Introduction: -

Man brought surprise creation of considerable shifts in our day-to-day existence. Indian software program professional made massive strides inside the records era enterprise of Indian. Thus, the humans make or manipulate business enterprise.

The strategy to this question cantered on the subsequent areas.

- Getting the individuals who should make an enterprise organisation.
- Enabling those people to acquired talents to make a successful company.

Training: -

Training is a short-time period academic method and making use of a scientific and organized process via which employees analyse technical information and abilities for definite reason. Training is a planned manner to alter attitude, knowledge or skilled behaviour via gaining knowledge of revel in to achieve overall performance in any sports.

Development:

Management improvement is all those sports and application whilst identified and controlled have massive affect in converting the potential of the person to perform his mission higher and in going so all likely to increase his capability for destiny challenge. Training is a funding, more we do, higher we perform.

Need for the study: -

Employees play a massive role in an organization. Among all of the four sources land exertions, capital and machinery, personnel are taken into consideration as essential and powerful resource. Employees are the key for the achievement of any business. The motive of my examine is to study and examine education and improvement in Electro metal Castings Limited to the employees working in exceptional cadre corporations in every of the department within the company.

Scope of the study: -

The study is conducted to know the various types of training programmed in Electrosteel Castings Limited. The study is including managers and workers of all departments. Training reduces supervision. Complaints and absenteeism in the organization. As workers acquire new knowledge and job skills to increase their market value and earning power. This study would to bridge up the gap between relationship of employer and employee if any.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Inventory Management in Sri Varsha Food Products India Limited

M. Sai Chandana[1], E. Kusuma[2]

[1]MBA, Annamacharya Institute of Technology & Sciences Tirupathi.
[2]Assistant Professor, Annamacharya Institute of Technology & Sciences Tirupathi

ABSTRACT:

Inventory Management is a fundamental aspect of managing a company successfully. Inventory is a animated part of current assets mainly in manufacturing concerns. Huge funds are faithful to inventories as to ensure smooth flow of production to meet consumer demand. Maintaining Inventory also involves holding or carrying costs along with opportunity cost. An efficient inventory management ensures continuous production by maintaining inventory at a satisfactory level. It also minimizes capital investment and cost of inventory by avoiding stock-pile of product. Efficient and Effective Inventory Management goes a long way in successful running and survival of business firm.

INVENTORY MANAGEMENT:

Inventory is a list for goods and materials, or those goods and materials themselves, held available in stock by a business. It is also used for a list of the contents of a household and for a list for testamentary purposes of the properties of someone who has died.

Investment in inventory normally accounts for about 1/3 value of the total assets and for an average manufacturing concern, cost of inventory represents about one half of the product cost. Because inventory constitutes such a significant part of product cost since the cost is controllable, proper planning, purchasing, handling, accounting and control of inventories is of great significance.

It is almost essential to maintain some inventories for the smooth functioning of an enterprise.

INTRODUCTION TO INVENTORY:

Inventory in extensive sense, is defined as any idle resource of an enterprise. It is a physical stock of goods kept deportment for the purpose of future concerns. The term is generally used to indicate raw materials in process, finished products, packing, spares and others – stocked in order to meet expected demand or distribution in the future. Though inventory of materials is an idle resource –it is not meant for immediate use.

DEFINITIONS:

- According to **GUTHMANN AND DOUGHAL:** "Business Finance can broadly be defined as the activity concerned with planning, rising, controlling and administering of funds used in the business".

❖ **KEY POINTS:**

Inventory of materials, product cost, cost of inventory.

REVIEW OF LITERTRATURE:

Abramovitz and Modigliani (1957):They highlighted the relationship between capacity utilization and inventory investment. Existing stock of inventories was expected to adjust to the desired levels. Thus the variable, existing stock of inventories, was essential to be negatively related with the desired stock. The result was that there is positive relation among the ratio of inventory to sales and inventory investment. High ratio of stocks to sales in the past suggests requirement of high levels of inventories in the past and promising high investment in inventories in the current period also.

Krishna Murthy (1964) : Study was aggregative and dealt with inventories in the private sector of Indian economy as a whole for the period 1948-61. This study used sales to represent demand for the product and suggested the importance of accelerator. Short-term rate of interest had also been found to be significant.

A STUDY ON CUSTOMER SATISFACTION IN MUTHOOT FINANCE, VENKATAGIRI.

***A. Umapathi , **E. Kusuma MBA.,**

***Student, MBA 2nd Year, Department of MBA, Annamacharya institute of Technology &Sciences: Tirupati.**

**** Assistant professor Department of MBA, Annamacharya institute of Technology &Sciences: Tirupati.**

Abstract

My study report gives a brief on Customer Satisfaction and the techniques of achieving Customer Satisfaction. It focuses on customer's perceptions. Many firms are interested in understanding what their customers thought about their shopping or purchase experience, because finding new customers is generally more costly and difficult than servicing existing or repeat customers. Such researches provide a wider scope to the firms in the terms of high customer satisfaction. "Within organizations, the collection, analysis and dissemination of these data send a message about the importance of tending to customers and ensuring that they have a positive experience with the company's goods and services."

Key words: Customers, Purchase experience, Repeat Customers.

Introduction:

Customer satisfaction, a term frequently used in marketing, is a measure of how products and services supplied by a company meet or surpass customer expectation. Customer satisfaction is defined as "the number of customers, or percentage of total customers, whose reported experience with a firm, its products, or its services (ratings) exceeds specified satisfaction goals." In the survey of nearly senior marketing managers, 71 percent responded that they found a customer satisfaction metric very useful in managing and monitoring their businesses.

The authors also wrote that "customer satisfaction data are among the most frequently collected indicators of market perceptions. Their principal use is twofold:"

"Although sales or market share can indicate how well a firm is performing currently, satisfaction is perhaps the best indicator of how likely it is that the firm's customers will make further purchases in the future. Much research has focused on the relationship between customer satisfaction and retention. Studies indicate that the ramifications of satisfaction are most strongly realized at the extremes."

Collection of data : Primary & Secondary

Sample Size :100

Research Design : Descriptive research design

Data Collection Tool: Questionnaire.

NEED FOR THE STUDY:

- Customer satisfaction plays a vital role in the company's growth. If customers are satisfied with the product or service, the company can expand otherwise it has to focus the areas where customers are not satisfied, for this, we need to study the Customer satisfaction of the company. The present study focuses on customer satisfaction of Muthoot Finance in Venkatagiri.

A STUDY ON ADVERTISING AND SALES PROMOTION TOWARDS DODLA DAIRY, PALAMANER

***v vamsi**
****Ms.E.Kusuma**
***Student, Department of MBA, Annam Acharya Institute of Technology & Sciences :: Tirupati, vamsivemula19@gmail.com**

****Assistant Professor, Annam Acharya Institute of Technology & Sciences :: Tirupati, kusuma.mba85@gmail.com**

ABSTRACT

In today's business world customers are considered to be kings, this study seeks to demonstrate the impact of sales promotion and advertising simultaneously It requires several days to accumulate data and information through questionnaire, surveys, site visits and walk-thorough investigations which are the primary and secondary basis of this study. It is important for producers to meet the needs of customers in order to stay competitive. One of the marketing implements that is used in interesting the attention of the customer is sales promotion. The aim of this paper therefore is to determine the effect of sales promotion, the Dodla dairy products is comparatively low but it has the good brand name in the market as well as in the perception of the customers.

***Key words**: sales promotion and advertising.*

Introduction:-

Sales promoting gives an instantaneous inducement to act by using presenting more worth over and above what's constructed into the product at its everyday charge. These brief inducements are supplied generally at a time and place in which the buying decision is made. Not handiest are sales promotions very common within the modern-day competitive market conditions, they're growing at a quick tempo.

In spite of the directness, income promotions are fairly complex and a wealthy tool of advertising with innumerable innovative possibilities constrained most effective with the aid of the imagination of promoting planners. Sales promotion is often noted by means of the names of 'greater buy cost' and 'underneath-the-line promoting'.

Today we discover businesses in almost all sectors presenting a few type of a merchandising scheme. These sectors range from motors to beverages, from financial offerings to foods, from family durables to offerings, from household merchandise to commercial enterprise products, from personal care to textiles and clothing.

MEANING OF SALES PROMOTION: -

A sales promotion is a advertising and marketing approach in which a commercial enterprise will use brief-time period campaigns to spark hobby and create demand for a product, carrier or different offers. Sales promotions could have many goals and perfect consequences, which we will explore in detail at some point of this text. Primarily, sales promotions are used to inspire buying behaviour or trigger an uptick in purchases within the quick term, in order to reach a benchmark or aim. Although the on the spot cause of a income merchandising is an uptick in income, there are plenty of other advantages to constructing out a strategic sales promoting method together with your advertising team.

NEED FOR THE STUDY

This survey is to identify and focus on the sales promotion of system. To accomplish this, a survey was conducted to gather the impartial information about the sales promotion. The study was conducted for the below needs.

- To know how to improve the sales increase in competitive market.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Working Capital Management in HFL, Kasipentla

[1]Thuraka Gautham, [2] Sri K. Srinivasan

[1]Student of MBA, Annamacharya Institute of Technology & Sciences Tirupathi
[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupathi

ABSTRACT:

Working capital is similar to the heart of each commercial enterprise. A look at specializes in brief term economic management and Working capital control. Working capital refers to that part of the firm's capital that's required for brief-term financing cutting-edge assets, this continues revolving rapid and continuously converted to cash. Hence, this paper analyses monetary viability, shape and usage of operating capital in the employer as analyses for five years from 2016-17 to 2020-21. The study is mainly primarily based at the Secondary information of the corporation. Further, to measure the effective utilization of the assertion of operating capital, Ratio analyses were used. It became concluded that the operating capital is a crucial position of an enterprise.

INTRODUCTION:

Working capital is that quantity of price range which is required to perform the everyday operations of a company. It may also regard as that liquidity position of an organization, which is hired in–time period operations. This operation includes commonly such items inclusive of unused materials, semi – completed items, completed items, sundry borrowers, short – time period investments and so on., Thus working capital refers to all the liquid assets. There is no business for which running capital isn't adequate. The primary goal each company is to maximize shareholders wealth.

Working capital is the heart and soul of every business. A study of working capital is of major importance to internal and external analysis because of its close relationship with the everyday operations of a business. As pointed out by Ralph Kennedy and steward mc Muller, inadequacy or mismanagement is the leading cause of risk in business. Capital required for a business can be classified into two main categories such as Fixed capital and working capital. Working capital refers to that part of firm's capital which is required for short-term financing current asset, this keeps revolving fast and constantly converted to cash. Working capital management is the efficient management of the current assets and current liabilities. The term working capital is used for the capital required for day to day working activities in a business concern. Such as for purchasing raw materials for meeting day to day expenditure on manufacturing and Processing of milk, staff salaries, wages, rent, rates, advertising, etc. A solvency of a concern its proper circulation provides to the business the right amount of cash to maintain regular flow of its operations. Profitability & solvency are the twin objective working capital management. Hence, this paper analyses the working capital management of HFL, Kasipentla.

Gross Working Capital = Investments in Current Assets only

Net Working Capital = Current Assets - Current Liabilities

DEFINITION OF WORKING CAPITAL

Working Capital refers to that part of the firm's capital, which is required for financing short-term or current assets such a cash marketable securities, debtors and inventories. Funds thus, invested in current assets keep revolving fast and are constantly converted into cash and this cash flow out again in exchange for other current assets. Working Capital is also known as revolving or circulating capital or short-term capital.

The following are some definitions of this group:

"Working capital means current assets"

MEAD, BAKER, MOOT.

"Working capital refers to a firm's investment in short-term Assets like cash, Short-term securities, and Account receivables inventories."

-WESTON & BRIGHAM.

"The sum of the Current Assets id the working capital of a Business"

-J.S. MILL.

"Any acquisition of funds of which increase the Current Assets increase Working Capital also, for the are one and these same"

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Brand Loyalty in LG Company, Tirupati

Y. Girish[1], K. Srinivasan[2]

[1]Student, MBA 2nd year, Department of MBA, Annamacharya Institute of Technology &Sciences: Tirupati.,
[2]Assistant professor,Department of MBA, Annamacharya Institute of Technology &Sciences: Tirupati.

ABSTRACT:

The ultimate objective of marketing is to satisfy customers needs, while ensuring profit and fulfilment of organizational objective. brand loyalty is one of such means through which the ultimate marketing goal can be achieved. brand loyalty bears many tangible and intangible benefits in terms of market share, brand image, permanentcustomer base etc. the key objective of the article is to get an overall understanding about brand loyalty. The article also attempts to assess and discuss various factors that have a bearing on the brand loyalty. the paper is a teaser for the researchers to develop deep in the topic of brand loyalty.

Key words: Brand Loyalty, Brand, Trust, Brand Personality.

Introduction:

In marketing, **brand loyalty** describes a consumer's positive feelings towards a brand, and their dedication to purchasing the brand's products and/or services repeatedly, regardless of deficiencies, a competitor's actions, or changes in the environment. It can also be demonstrated with other behaviour such as positive word-of-mouth advocacy. Corporate brand loyalty is where an individual buys product from the same manufacturer repeatedly and without wavering, rather than from other suppliers. Brand loyal customers believe that is certain brand represents both higher quality and better service than any competitor and the price does not matter brand loyal customers might make fewer total purchases but the profit margins on their purchases are larger once established brand loyalty is fairly easy to retain assuming of course that product quality and service level remind high brand loyalty is also less expensive to retain than customer loyalty which requires constantly offering low prices and regular discounts to maintain best deal on the market status you.

Importance of brand loyalty:

Brand loyalty is a consumer behaviour which a customer develops over a period of time by repeated use of a particular brand, product or service. Customers who find their needs fulfilled 32and find the product having good quality, and high value proposition tend to become loyal towards a particular brand. This positive behaviour towards a product or service is useful for companies as they become positive brand advocates and help spread a positive word of mouth about the brand. Consumers who develop a strong brand loyalty tend to become regular customers and also help their friends & family identify the benefits of the products & services that the have been benefitted by. Such is the importance for companies that they have brand loyalty management to ensure that customers get the correct value proposition offered. Good product quality, brand awareness and positive brand image contributes to building brand loyalty.

Research methodology:

Research methodology considered as the serve of the project. Without a proper well-organized research plan, it is impossible to complete the project and reach to any conclusion. The project was based on the survey plan. The main objective of survey was to collect appropriate data, which work as a base for drawing conclusion and getting result Therefore, research methodology is the way to systematically solve the research problem. Research methodology not only talks of the methods but also logic behind the methods used in the context of a research study and it explains why a particular method has been used in the preference of the other methods.

Research design:

Research design is important primarily because of the increased complexity in the market as well as marketing approaches available to the research in fact it is the key to the evolution of successful marketing strategies and programmers. It is an important tool to study buyer's behaviour, consumption, brand loyalty, and fox market changes. A research design specifies the methods and procedures for conducting a particular study. According to Kerlinger, "Research Design is a plan, conceptual structure, and strategy of investigation concerned as to obtain answers to research questions and to control variance.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study On Working Capital Management in Hindusthan Coca- Cola Beverages (Pvt) Ltd., Srikalahasti

C. Pavan Kumar , ****K. Srinivasan (M.Com, MBA)

*Student, MBA 2nd year, Department of MBA, AnnamacharyaInstitute of Technology &Sciences: Tirupati., **paonechekuri@gmail.com**

**Assistant professor,Department of MBA, AnnamacharyaInstitute of Technology &Sciences: Tirupati.

ABSTRACT:

Working capital is similar to the heart of each business enterprise. A look at specializes in short term financial and Working capital management. Working capital refers to that part of the firm's capital that's required for current financing short term assets, this continues revolving and continuously converted to cash in day-to-day operating cycle. Hence, this paper analyses liquid funds viability, components and usage of operating capital in the firm for five years from 2016-17 to 2020-21. The study is mainly primarily based at the Secondary information of the taken from annual reports of HCCB Private Limited. Further, to measure the effective utilization working of operating capital, Ratio analyses were used to measure profitability. It is concluded that the operating profitis crucial value to measure theworking capital position of a business organization.

Key Words: Working Capital, Operating Cycle, Profitability, Operating Profit

Introduction: -

Working capital is required to perform the everyday business operations of a company. It may also said that liquidity position of an organization. This operational activity includes commonly such items raw-materials, semi – completed items, completed items, sundry creditors, short – time investments and so on., Thus working capital refers to all the liquid assets. There is no business activity for which running capital isn't available. The primary goal each company is to maximize profitability and growth.

Working capital is the heart and soul of every business. A study of working capital is of major importance to internal and external analysis because of its close relationship with the everyday operations of a business. As pointed out by Ralph Kennedy and steward mc Muller, inadequacy or mismanagement is the leading cause of risk in business. Capital required for a business can be classified into two main categories such as Fixed capital and working capital. Working capital refers to that part of firm's capital which is required for short-term financing current asset, this keeps revolving fast and constantly converted to cash. Working capital management is the efficient management of the current assets and current liabilities. The term working capital is used for the capital required for day to day working activities in a business concern. Such as for purchasing raw materials for meeting day to day expenditure on manufacturing and Processing of soft drinks, staff salaries, wages, rent, rates, advertising, etc. for regular flow of its operations. Profitability &Liquidity are the twin objective working capital management. Hence, this paper analyses the working capital management of

Hindusthan Coca- Cola Beverages (Pvt) Ltd., Sri kalahasti.

Need of the study: -

- Current assets must be managed efficiently in order to maintain the liquidity of the firm
- The working capital wants to know the optimal balances of current assets & current liabilities
- To manage the everyday operations of the firm.

Scope of the study: -

- The study is confined to Hindustan Coca-Cola beverages pvt ltd and analysis of its financial statements.
- The principal purpose of the observe is to evaluate the proper management of current assets & liabilities.
- The study concentrates more on the running capital management of Hindustan Coca-Cola drinks pvt ltd.

Objective of the study: -

- ❖ To analyse the working capital changes in the company from 2016-17 to 2020-21
- ❖ To examine the liquidity position of an organization.
- ❖ To analyse the working capital position of the company.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Customer Satisfaction towards Bharathi Cements Ltd., Kadapa

[1]G Rama Krishna, [2]Sri K. Srinivasan

[1]Student of MBA, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati
[2]Asst. Professor, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati

ABSTRACT

In any business, small or large, customer satisfaction is considered as a key strategy in the last few decades. Previously it is a not acceptable because most of the business organizations are product based marketing. They are perceived that attracting new customers better than retaining existing one. However, currently, these organizations are using customer satisfaction as a prime business strategy as customer centric model and it is key indicator in the ever-changing dynamic environment to get the sustainable competitive advantage. This customer satisfaction is impact by several variables and different dimensions. Therefore, this qualitative factor examines with the variety of literature support the relationship of variables with respect to customer satisfaction. To understand and make possible further studies contextually and empirically, this study is presented to show how these variables will impact the customer's satisfaction. This would improve the customer satisfaction in Bharathi Cement Company, Kadapa.

Keywords: customer satisfaction, relationship, variables, Customer centric model.

Introduction

CUSTOMER DEFINITION

"A person, company or other entity which buy goods and services produced another person, company or other entity".

CUSTOMER SATISFACTION DEFINITION

"A provision of goods or services which fulfill the customer's expectations in terms of quality and services, in relation to price".

Businesses survive because they have customer4s who are willing to buy their products or services. However; many businesses fails to "check in" with their customers to determine whether they are happy or not and what it will make or keep them happy.Satisfaction is a person feeling of pleasure or disappointment resulting from comparing aProduct is perceived performance(outcome) in re3lation to his or her expectations. As this definition make clear, satisfaction is a function of perceived performance and expectations, if the performance falls short of expectations, the customer is dissatisfied, if the performance exceeds the expectations, the customers are highly satisfied (or) delighted.

Many companies are aiming for high satisfaction because customers who are just satisfied are still find it easy to switch when a better offer comes along, those who are highly dissatisfied are much less ready to switch. High satisfaction or delight creates an emotional affinity with the brand, not just a rational performance. The result is high customer loyalty.

Review of Literature

- Customer/consumer satisfaction is "an evaluation that the chosen alternative is consistent with prior beliefs with respect to that alternative" – Definition by Engel and Blackwell (1982).
- Tse and Wilton (1988) define as, "the consumer's response to the evaluation of the perceived discrepancy between prior expectations (or some other norm of performance) and the actual performance of the product/service as perceived after its consumption" .
- Berry and Parasuraman (1991) argue that since customers' satisfaction is influenced by the availability of customer services, the provision of quality customer service has become a major concern of all businesses. Customer satisfaction is typically defined as a post consumption evaluative judgement concerning a specific product or service. It is the result of an evaluative process that contrasts pre-purchase expectations with perceptions of performance during and after the consumption experience.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Financial Performance Analysis on APSPDCL

[1]K. Srinivasan, [2]P. Reddy Sekhar

[1]Assistant Professor, MBA Department, Annamacharya Institute of Technology & Sciences, Tirupati
[2]Student MBA, Annamacharya Institute of Technology & Sciences, Tirupati

ABSTRACT

The ratio analysis is one of the most powerful tools of financial analysis. It is used as advice to analyze and interpret the financial health of enterprise. With the help of ratios that the financial statements can be analyzed more clearly and decisions made from such analysis. Financial analysis is the process of identifying the financial strengths and weakness of the firm y properly establishing relationship between the items of balance sheet and the profit and loss account. There are various methods or techniques used inanely zing financial statements.

MEANING OF RATIO ANALYSIS

The ratio analysis is one of the most powerful tools of financial analysis. It is used as advice to analyze and interpret the financial health of enterprise. With the help of ratios that the financial statements can be analyzed more clearly and decisions made from such analysis. Financial analysis is the process of identifying the financial strengths and weakness of the firm y properly establishing relationship between the items of balance sheet and the profit and loss account. There are various methods or techniques used in analyzing financial statements. By the use of ratio analysis one can measure the financial conditions of a firm and can point out whether the conditions is strong, good, questionable or poor. Analysis and of financial statement with the help of ratio is termed as Ratio analysis.

IMPORTANCE OF FINANCE

The importance of financial management cannot be denied. In every organization where is involved, sound financial management is indispensable Financial management helps a firm in optimizing the output from a given input of funds. It also helps a firm in monitoring the effective employment of funds, It also helps a firm in monitoring the effective employment of funds in fixed assets as well as in current assets. Financial management helps in profit planning, capital budgeting, controlling inventories, etc. Financial management is important even for non-profit making organizations.

INDUSTRY PROFILE

Power is an important tool for economic growth of the country. Power is vital for every form of human activity- domestic, agriculture and industrial infrastructure such as telecommunication and transport. The demand for electricity in India is enormous and is growing steadily. This growth has been slower than country's economic growth. The big challenge in front of the power industry is to balance the demand and supply of electricity. There exists a link between economic growth and per capita consumption of electricity.

Installed capacity

India's power sector has shown remarkable growth from about 1,400 MW in 1947 to 134716.7MW by June, 2007 inclusive of all the three Sectors (Central, State, Private Sectors)**.**

Thermal Power Plants:

Current installed base of Thermal Power is **86,936 MW** which comes to 64.5% of total installed base.

Hydro Power Plants:

India was one of the pioneering states in establishing hydro-electric power plants. The power plant at Darjeeling and Shims a (Shivanasamudra) was established in 1898 and 1902 respectively and is one of the first in Asia. Current installed base of Hydro Power is **33,486 MW** which comes to 24.8% of total installed base.

Electricity ACT 2003:

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Recruitment and Selection Process in Vijaya Milk Products, Nanadyal.

[1]S. Vishitha Reddy, [2]K. Srinivasan

[1]Student of MBA, Annamacharya Institute of Technology & Sciences College, Tirupati.
[2]Assistant Professor, Department of Business Administration, Annamacharya Institute of Technology & Sciences College, Tirupati.

ABSTRACT:

Better recruitment and selection strategies result in improved organizational outcomes. Recruitment is the process of searching for prospective employees and stimulating them to apply for jobs in the organization

1. INTRODUCTION

Human Resources Management is concerned with human beings, who are the energetic elements of management. The success of the any organization or an enterprises will depend upon the ability, strength and motivation of person's working in it.

The Human Resources Management refers to systematic approach to the problems in any organization. It is concerned with the recruitment, training and Development of personnel. Human resource is the very most important asset of an organization. It ensures sufficient no. of supply, proper quantity and as well as effective utilization of human resources.

In order to meet the human resources needs, and organization will have to plan in advance about the requirement and the sources, etc. The organization also have to undertaken recruiting selecting and training processes. Human Resources Management includes the inventory of present manpower in the organization. In cases sufficient number of persons is not available in the organization then external sources are also identified for employing them. Human Resources Management lays emphasis on better working condition and also ensures the employment of proper work force.

A part of HRM is assigned to personnel who perform some of the staffing function. The staffing process is a flow of events, which result in a continuous managing organizational position, all levels from the top management to the operatives level. This process includes manpower-planning, authorization for planning; developing sources of applicant evaluation of applications employment decision (selection) offers (placement) induction and orientation, transfers, demotions, promotions and separations.

Manpower's planning is a process of analyzing the present and future vacancies as a result of retirement, discharges, transfer, promotion, absence or other reasons.

Recruitment is concerned with the process of attracting qualified and components personnel for different jobs. This includes the identification of existing sources of the labor market, the development of new sources and the need for attracting large number potential applications so that good selections may be possible.

Definition:

"Recruitment and selection is a process to discover the sources of manpower to meet the requirement of the staffing schedule and to employ effective measures for attracting that manpower in adequate number to facilitate effective selection of an efficient working force".

- Dale Yoder

NEED FOR THE STUDY

1. Every organization requires certain number of people to fulfill the purpose of its existence.
2. In order to have efficient people, utmost care should be taken in the recruitment process.

Jobs play an important role in every organization.

3. Human resources are responsible and accountable for the work assigned to them. With so many new companies coming up, HR department

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Select Equity Funds at SBI Mutual Funds

P Manoj Kumar[1], L Vincent Raj Kumar[2]

[1]MBA Student, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati
[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati

ABSTRACT

The mutual fund industry in India started in 1963 with the formation of Unit Trust of India, at the initiative of the Government of India and Reserve Bank of India. Mutual Funds in recent past has gained immense importance in general and in India in particular. Mutual fund companies are designing new schemes to attract the customers. The present paper is an attempt to know about Mutual Fund, it's various schemes and analyze the different risk factors involved. It also focuses on the performance evaluation of selected SBI Mutual Funds schemes which are playing a vital role in the Indian economy.

Keywords: Mutual funds, Unit trust of India, Reserve bank of India, Indian economy, Performance Evaluation, Return, Risk.

INTRODUCTION

"Mutual fund is a common pool of money in which investor place their contribution that are to be invested in accordance with the stated objective. The fund belongs to all the investors depending on the proportion of his contribution to the fund."

A Mutual Fund is a trust that pools the savings of a number of investors who share a common financial goal. The money thus collected is then invested in capital market instruments such as shares, debentures and other securities. The income earned through these investments and the capital appreciations realized are shared by its unit holders in proportion to the number of units owned by them. Thus a Mutual

Fund is the most suitable investment for the common man as it offers an opportunity to invest in a diversified, professionally managed basket of securities at a relatively low cost.

REVIEW OF LITERATURE

A "mutual fund is non depository, non – banking financial intermediary that acts as an investment vehicle, for bringing wealth holders and deficit units together directly".

Pierce and Jaime's .L

Mutual fund is a corporation which accepts money from investors and uses the same to buy stocks, long – term, short-term and debt instruments used by issuers.

Weston's. Fred and bringham.

A mutual fund is financial intermediary that pools the savings of investors for collective investment in a diversified portfolio of securities. A fund is "mutual" as all of its returns minus its expenses are shared by the funds investors.

"Mutual fund is a common pool of money in which investor place their contribution that is to be invested in accordance with the stated objective. The fund belongs to all the investors depending on the proportion of his contribution to the fund."

NEED FOR THE STUDY

The Post-liberalization period has witnessed the emergence of entrance of many domestic and foreign MNCs in the field of banking, insurance and of late, no less than mutual funds, posing a threat to the Indian mutual fund industry, especially to SBI Mutual Funds – a public sector mutual fund. Moreover, most of the investors, even the small investors have started switching their investments into FMCG and IT stocks . which are said to bring quick bucks, queering at the pitch of SBI Mutual Fund business and threatening its very existence, even after the recently notified SEBI's slew of regulations with regard to ban on the mushroom growth of me-too MFs. The present study is intended to portray the prescription and proscription of different investment strategies to be adopted by SBI MFs so that it can, while providing better growth and income to investors emerge as a giant MF among all the MFs in India.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Employee Satisfaction in Electrosteel Castings Limited, Sri Kalahasthi.

[1]S Nagalakshmi, [2]L Vincent Raj Kumar

[1]Student, MBA II year, Department of Management Studies, Annamacharya Institute of Technology and Sciences, Tirupati.
[2]Assistant professor, Department of Management Studies, Annamacharya Institute of Technology and Sciences, Tirupati.

ABSTRACT

There are several factors which contribute to employee satisfaction viz. work conditions, employee benefits, growth opportunities, nature of work, promotions, work group. Few of the determinants like job security, communication of higher authorities with employees, reward and recognition, compensation, safety and health, performance appraisal etc also play an important role. The present article throws light on the satisfaction level of the employees of Electrosteel castings limited, Srikalahasthi. A humble attempt was made to find out whether an impact was there because of COVID pandemic on the satisfaction levels of employees. The information was gathered by administering a questionnaire to the employees. The results of the survey showed that most of the employees were satisfied with the company facilities.

KEYWORDS: Employee satisfaction, remuneration, nature of work, career growth and opportunities, team work.

INTRODUCTION

Employee satisfaction is a measure of how satisfied workers are with their job and running environment. Keeping morale high among employees can be splendid gain to any employer, as happy employees may be probable to benefit to any employer. There are many elements for maintaining excessive worker pleasure, which wise employers would do will to put in force. Perhaps one way to outline employee satisfaction may be say that it's miles the ends country of feeling emphasis the fact that the after a mission is executed or interest has taken location whether or not it is noticeably individualistic effort of writing a book or accumulating endeavour of constructing of dam.

Much of the research has proven that there is no direct relationship between process pride and performance. Despite this, businesses spend good sized sums of cash, in a ramification of sports to promote job satisfaction. There are even agencies that use HRD Programs to increase that happiness element. Employers absent to applications not due to the fact they have particular gaining knowledge of goals but as it makes them sense top.

DEFINITION

Employee Satisfaction can be described as the amount of universal wonderful affect (or feeling) that people have towards their activity.

-D.C. Feldman

REVIEW OF LITERATURE

Employee satisfaction is in regard to at least one's feeling or country of thoughts concerning the nature of their work. It can be encouraged via a diffusion of factors e.g: excellent of one's relationships with their supervisor, quality of physical environment in which they work. Degree of fulfilment in their paintings and so forth. To increase worker pleasure, many agencies will have obligatory survey or face to face assembly either employees to acquire data. Both of those methods have pros and cons and ought to be chose cautiously. Surveys are often stressful allowing people more freedom to be honest with out worry. Interview with organization control can experience intimating but if accomplished cautiously can permit you to workers recognize their voice has been heard and their subject addressed by means of the ones in changes.

Surveys and meetings can surely were given the middle of records surrounding employee pride and can be incredible tools to pick out precise troubles main to lowering morale. Many professionals agree with that one of the exceptional approaches to maintain worker pleasure is to make employees experience they are part of the circle of relatives or team. Holding office events such as parties and group outings can assist near bonds amongst people.

The backbone of employee pride in admire for employees and the process they perform. In each interaction with control, personnel must be dealt with politeness and hobby. In easy street for employers to discuss troubles, with upper management must be maintained and punctiliously monitored. Even if control can't meet all of the needs of personnel. Showing employees that they are being heard and placing honest dedications into compromising will frequently help to improve morale.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Employee Welfare and Safety Measures at APSPDCL, Tirupathi

P. Reddy Prasad, L. Vincent Raj Kumar

Annamacharya Institute of technology and Sciences,India

ABSTRACT

Employees play a key role in the existence and growth of any organisation, therefore their welfare is essential. During the past few years, both public sector and private sector organisations have been contributing towards the employee's benefits and also increase their efficiency. Employees' welfare facilities include housing facilities, free medical facilities, retirement benefits, children and adult educational benefits, loan facilities, etc. If the organisations do not bother about the employees benefit, but expect efficient and high performance from them, it is a mere waste. Organizations have to provide welfare facilities to their employees to keep their motivation levels high. Employees on the enforceability of various welfare measures in both the public and private sector organizations. The study also throws light on impact of various welfare measures on the employees' performance.

INTRODUCTION

Human resource management (HRM) is a function in the organizations designed to maximize employee performance in service of an employer's strategic objectives. HR is primarily concerned with the management of people within organizations, focusing on policies and on systems. It also concerns itself with organizational change and industrial relations, that is, the balancing of organizational practices with requirements arising from collective bargaining and from governmental laws.

Employee Welfare:-

The term' Employee Welfare' refers to the facilities provided to an employee inside and outside the organization premises such as canteens, rest rooms and recreation facilities, housing and all other services that contribute to the wellbeing of the employee and the efficiency of the workers. The concept of 'employee welfare' is flexible and elastic and differs widely with time, region, industry, social values and customs, degree of industrialization, the general socioeconomic development of the people and the political ideologies prevailing at a particular time.

REVIEW OF LITERATURE

- Michael (2001)in his book, "Human Resource Management and Human Relations" said that the provision of intra-mural and extra-mural welfare facilities help in improving the quality of work life of employees and there by good human relations will develop among different cadres of employees.
- Shashi, K. Gupta and Rosy Joshi (2005)in their book, "Human Resource Management" discussed"labour welfare" in detail. The book covers all the aspects of labour welfare such as types of labour welfare, statutory provisionsco ncerning welfare, approaches to welfare and also the significance of labour welfare.
- DebashishSengupta (2007) in his article, "Responsibility for Sustainability - The Changing Face of Corporate Social Responsibility" stated that organizations should design welfare schemes keeping in view the well-being of employees. This is because, the provision of welfare facilities leads to a motivated and happy work force, who are obviously more productive, efficient and creative , ultimately leading to the formation of a performing organization.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Working Capital Management in Sri Varsha Food Products India Limited

D.Subbarayudu*, L. Vincent Raj Kumar**

*Student,II MBA, Department of Management Studies, Annamacharya Institute of Technology and Sciences Tirupati, e-mail: balu9160611641@gmail.com

**Assistant Professor,Department of Management Studies, Annamacharya Institute of Technology and Sciences Tirupati

ABSTRACT

Working capital management is part of the financial considerations that a finance manager needs to determine and plays an important role in determining the profitability of the firm. In view of its importance, this study aims to investigate on the effect of working capital management components and working capital management policy towards profitability of Sri Varsha Food Products India Limited for a five year period from 2017-18 to 2021-22.

Key words: Working capital management,Finance Manager, Profitability Of The Firms.

Introduction:

One of the most important areas in the day-to-day management of the firm is the management of working capital. Working capital management is the functional area of the finance that covers all the current accounts of the firm. It is concerned with management of the level of individual current assets as well as the management of total working capital. Financial management means procurement of funds and effective utilization of these procured funds. Procurement of funds is firstly concerned for financing working capital requirement of the firm and secondary for financing fixed assets.
Inadequate working capital means shortage of raw materials, labor etc., resulting in partial current assets less current liabilities-has no economic meaning in the sense of implying some type of normative behavior

REVIEW OF LITERATURE

Singh and Kumar (2014) believe that the development in the existing literature of WCM is limited. Nyamao ., 2012; found a positive association between WCM variables and firm's performance. He conducted a survey using a stratified random sampling technique.

OVERVIEW 0F THE COMPANY

VARSHA FOOD PRODUCTS INDIA LIMITED:

Sri Varsha Food Products India Limited was quick to see the potential in the sector and jumped into the fray even as the industry was still in its infancy. They have over 400 acres of farm-land where various crops are cultivated. Initially in 2004, they set up a canning facility signalling our intention to venture into fruit processing operations. As Economy and Food Industry was growing, so is our production and market. Later in 2008 we have established production and packing facilities and stated a full-fledged production process.
They were established to bridge the demand-supply gap of the rapidly expanding processed food niche. As company based in Tirupati Demand for the prized totapuri mangoes and delightful alphonso mangoes grows at nearly 15% per annum, so does our ability of producing, processing, aseptic packaging and canning them. Further on our fruit palette, we process guava, papaya, banana and tomato as pulps and concentrates. To catch up with the burgeoning markets, we have forayed into chilli and tamarindpaste production too. Chairman of the company is **Mr. K.Viswanada Naidu.**

NEED FOR THE STUDY

1.The projects is helpful in knowing the company's position of funds maintenance and setting the standards for working capital inventory levels, quick ratio current amount turnover level and web torn turnover level.

2.This project is helpful to the management for expanding the dualism and the project viability and present availability of funds.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Working Capital Management in APSPDCL, Tirupati

P. Surendra*, L. Vincent Raj Kumar**

*Student, II-yearMBA, Annamacharya Institute of Technology & Sciences, Tirupati

** Assistant Professor, MBA Department, Annamacharya Institute of Technology & Sciences, Tirupati

ABSTRACT

Working capital management is a business strategy designed to ensure that a company operates efficiently by monitoring and using its current assets and liabilities in the most effective way.It helps maintain a smooth operation of net operating cycle. The current study aims to evaluate the impact of working capital components on the financial performance of APSPDCL. The study used secondary data for a period of 5 years from 2017-2022.The results of the study have shown a satisfactory WCM in APSPDCL during the given period.

INTRODUCTION

Meaning of Working Capital:

Ordinarily, the time period "operating capital" stands for that a part of the capital, that's required for the financing of running or present day-day dreams of the agency. Working capital is the lifetime of every challenge. Whether it is production or non-manufacturing one with out ok walking capital, there may be no development inside the organization

Inadequate strolling capital technique scarcity of raw materials, hard work and so on., resulting in partial cutting-edge property tons much less present day-day-day liabilities-has no economic because of this internal the feel of implying some form of normative conduct. According to this line of reasoning, it is largely an accounting artifact. Working capital manage, then, is a misnomer.

The running capital of the company isn't always managed. The term describes a class of manage picks affects specific varieties of current property and contemporary liabilities. In turn, those decisions should be rooted within the trendy Valuation of the organization.

Definition:

- According to Western and Brigham, Working capital refers to a firm's investment in short term assets- cash, short term securities, accounts receivables and inventories".
- According to Hoagland, "working capital is descriptive of that capital which is not fixed. But the more common use of the working capital is to consider it as the difference between the book value of the current assets and the current liabilities.

Conceptual classification:

Working capital quantitative and qualitative. The quantitative concept takes into account as the current assets while the qualitative concept takes into account the excess of current assets over current liabilities. Deficit of working capital exists where the amount of current liabilities exceeds the amount of current asset.

1. Gross Working Capital = Total Current Assets
2. Net Working Capital = Excess of Current Assets over Current Liabilities
3. Working Capital Deficit = Excess of Current Liabilities over Current

REVIEW OF LITTERATURE

- Garcia-Teruel & Martınez-Solano, 2007; Karaduman et al., 2010; Pais & Gama, 2015) investigated the impact of WCM on firm' performance using ROA as a measure of firms performance and Average Collection Period (ACP), inventory conversion period (ICP),

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Brand Image of LG company with reference to HS Enterprises, Tirupati.

[1]Gudur Uday Kiran, [2]L.Vincent Raj Kumar

[1]Student of MBA, Annamacharya Institute of Technology & Sciences, Tirupati.
[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati.

ABSTRACT:

Brand image serves as a representation of the brand's products/services and reputation in the industry. Understanding what makes up a brand image and why it is important to business will help the company to transform into a customer oriented organization. Brand image builds credibility and loyalty among customers. The article mainly analyses the brand image of LG , brand value assessment methods, brand value, and brand benefits. The present study focused on customers perception of the brand in view of the recent pandemic.

Keywords: Brand, Brand Image, Brand Value, customer oriented organization, Customer's perception

Introduction:

Brand image is the current view of the customer's opinion about a brand. It can be defined as a unique bundle of associations within the minds of target customers. It signifies what the brand presently stands for. It is a set of beliefs held about a specific brand.

It is nothing but an organization's character. It is an accumulation of contact and observation by people external to an organization. It should highlight an organization's mission and vision to all. The main elements of positive brand image are- unique logo reflecting organization's image, slogan describing organization's business in brief and brand identifier supporting the key values.

Brand image is the overall impression in consumers' mind that is formed from all sources. Consumers develop various associations with the brand. Based on these associations, they form brand image.

NEED FOR THE STUDY

LG company is one of the best companies in the market. It has good brand awareness and reputation. The company produces quality products and the positioning in the market is good. The study on brand image is aimed to know the customers opinions, wants and perceptions towards quality and problems. In the light of Covid pandemic and ongoing war like situations in most of the countries, the company wants to know about its position among the competitors. It has wide scope to understand and illustrate this Brand image in a depth manner.

SCOPE OF THE STUDY:

The study has been conducted in the Tirupati area only. The study is useful to know the customer preference and their reason to prefer LG products. This study is useful to improve brand image with customers by the company. and also, useful to know what the customers are expecting from the company.

LIMITATIONS OF THE STUDY:

- The study was to restricted to Tirupati area only
- The duration of the project confined to only 45 days ,so time was major constraints.
- The sample size for survey is limited. AS the questionnaire was conducted; certain factors could not be studied in depth.

OBJECTIVES OF THE STUDY:

- To identify the satisfaction levels of LG company

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Inventory Management in Dodla Dairy Ltd., Palamaner

[1]V Venkata Kireeti, [2]L Vincent Raj Kumar

[1]Student, MBA, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati
[2]Assistant Professor, Department of MBA, Annamacharya Institute of Technology & Sciences, Tirupati

ABSTRACT

Inventory exists in almost every organization, it is crucial for an organization to have good understanding and strategy about inventory management. Inventory management has significance for an enterprise in an inventory intensive manufacturing industry. Inventory Management System is extraordinarily beneficial to commercial enterprise owners, as they allow shops to properly keep sales and buy statistics. When stock is mismanaged, it results in disenchanted purchasers, slower income and stacked warehouses. The present study on inventory management in Dodla Dairy focuses on what different kinds of inventory control techniques are followed and how effectively the inventory is managed. Five year data from 2017 has been taken and analysed for various inventory related ratios to know the effectiveness.

KEY WORDS: Inventory, Inventory Management System, strategy, enterprise, ratio, effectiveness .

INTRODUCTION

Finance is one of the basic foundations of all kinds of economic activities. It is the master key, which provides access to all the sources for being employed in manufacturing. Hence it is rightly said that finance is lifeblood of any enterprise, besides being the scarcest elements, it is also the most indispensable requirement. Without finance neither any business can be started nor successfully run. Provision of sufficient funds the required time is the key to success of concern. As matter of fact finance may be said to be the circulatory system of economic body, making possible the needed co-operation among many units of the activity.

INTRODUCTION TO INVENTORY

Inventory in wider sense, is defined as any idle resource of an enterprise. It is a physical stock of goods kept dept. for the purpose of future affairs. The term is generally used to indicate raw materials in process, finished products, packing, spares and others – stocked in order to meet expected demand or distribution in the future. Though inventory of materials is an idle resource –it is not meant for immediate use – it is almost essential to maintain some inventories for the smooth functioning of an enterprise.

DEFINITION OF INVENTORY MANAGEMENT

Inventory is a list for goods and materials, or those goods and materials themselves, held available in stock by a business. It is also used for a list of the contents of a household and for a list for testamentary purposes of the possessions of someone who has died.

MILK INDUSTRY IN INDIA AND ABROAD

Although a beginning in organized milk handling was made in India with the establishment of military dairy farms (oldest Allahabad, 1889), the salient features of the market industry had been:

1. Handling of milk in Co-operative Milk Unions established all over the country on a small scale in the early stages.
2. Long distance refrigerated rail-transport or milk from Anand to Bombay since 1945.
3. Pasteurization and bottling of milk on a large scale for organized distribution was started a Aarey (1950), Worley(1961), Calcutta (Haringhta, 1959), Delhi(1959), Madras(1963)etc.,
4. Establishment of Milk plants under the five-year pans for Dairy Development all over India. These were taken up with the dual object of increasing the national level of milk consumption and ensuring better returns to the primary milk producer. Their main aim was to produce more, better and cheaper milk.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Customer Perception towards LG Company from HS Enterprises, Tirupati.

[1]M. Bhaskar Reddy, [2]P. Ganesh

[1]MBA Student, Annamcharya Institute of Technology & Sciences, Tirupathi,
[2]Assistant Professor, Department of MBA, Annamcharya Institute of Technology & Sciences, Tirupathi,

ABSTRACT:

This paper is discussing the idea of customer perception and how customer view product based on a price and overall experience. The customer perception modal factors affecting it are derived from price and overall experience. This concept has been demonstrated by the author in this paper. The main objective of this paper is critically appraised customer perception models and benefits. The success of a business depends on generating and retaining customers that are willing to purchase products at prices that are profitable to the company. Consumer perception describes how customers and potential customers view a company. Businesses should make sure that their products and services are viewed positively by consumers. Consumer perception is linked to the success of a business; because how consumers view it affects their decisions and actions. These perceptions may be changed with marketing.

Keywords: perception, customer & experience.

INTRODUCTION

The customer perception is measured by these factors, such as price and overall experience. A common marketing concept that measures how the customer perceives a company or its offerings. Marketing strategies like advertising, reviews, and public relations affect how the customer interacts with a company. Analyzing research by customer behavior specialist, it's clear to see that perception is a personal factor.

DEFINITION:

Customer perception is the opinions, feelings, and beliefs customers have about your brand. It plays an important role in building customer loyalty and retention as well as brand reputation and awareness

REVIEW OF LITERATURE:

With the help of Androulidakis, G.kandus (2015) determined that different brands of mobile phones lead to different security practices being used. The study examined users in a variety of different scenarios and found a noticeable difference in behaviour when using each brand. Not only companies need to focus on how to better protect their data from malicious agencies, but also on strengthening the mindsets and knowledge of their customers as well.

Rodolfo Márquez and Eva Espinar Ruiz (2015) found that information and communications technologies are a new dimension for teenagers in Spain. Their main idea is to understand how teenage Spanish teens interact with technology. They researched how teenagers use technological devices and where they use them, taking into account the advantages they have by using these devices. On the other hand, there is less of an utilization of these devices for education purposes than there should be. The result of the study show that there are some Positive relationships between exclusive name and quality perception, between exclusive name and word of mouth.

Need for the study

The study concentrated on the opinion of customers on LG TVs and it's features. Companies try to influence customer perception by making impressions that would persuade them toward consumption. The objective might be to attract new customers, retain the current ones or increase sales per customer. With a defined purpose, a firm can apply one or more different marketing techniques such as advertising, promotions, samples, social media and public relations in order to have valuable inputs that help them design techniques and messages to influence customer's perception. One way marketing departments can better understand consumer purchasing decisions is by paying attention to different types of stimuli – such as price, quality, and benefits. Marketing teams can also use CRM and AI to collect customer data and better identify the importance of each stimulus on their customers' decisions.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Classifications of Cash Flow Statement

P. Sonia, ****P. Ganesh

*Student of MBA, Department of Management Studies, Annamacharya Institute of Technology and Sciences Tirupati.

**Assistant Professor, Department of Management Studies, Annamacharya Institute of Technology and Sciences Tirupati.

ABSTRACT:

The concentration on the Cash flow statement is a significant instrument to investigate the money position of a business firm. It can mean changes in real money position during two monetary years. It likewise gives data about the money receipts and money instalments of a business for a given period. It gives remarkable data that praises the benefit and misfortune record and asset report. A cash flow statement is about which gives a total clarification to the adjustment of a company's money during a specific period by determining the firm sources and uses of money during the period from operating, investing, and financing activities. It gives helpful data about an element's exercises in creating cash from tasks. It is trusted that the substance of this Article would assist the perusers with understanding the Cash flow statement appropriately, This Article is got ready in light of the different auxiliary sources.

Keywords: Cash flow, financial activities, Investing activities, Operating activities.

INTRODUCTION:

A cash Flow Statement is a summed-up assertion showing cash inflows and money outpourings of working, supporting, and contributing nature over a particular timeframe. It requires opening and shutting asset reports and furthermore benefit and misfortune accounts. Cash includes cash available and request stores with banks. Cash counterparts are present moment, profoundly fluid speculations that are promptly convertible into known measures of money and which are dependent upon an immaterial gamble of changes in esteem.
Incomes are inflows and outpourings of endlessly cash counterparts. Working exercises are the important income-delivering exercises of the undertaking and different exercises that are not money management or supporting exercises. Contributing exercises are the obtaining and removal of long-haul resources and different ventures excluded from cash reciprocals. Funding exercises are exercises that outcome in changes in the size and synthesis of the proprietors' capital and borrowings of the undertaking.

DEFINITION:

A cash flow statement is a financial statement that provides aggregate data regarding all cash inflows a company receives from its ongoing operations and external investment sources. It also includes all cash outflows that pay for business activities and investments during a given period.

REVIEW OF LITERATURE:

1. Charles, E. Jordan and Marilyn A. Waldron(2010) Based on payout interference for future wearable shoes, which is believed to be a good fit. As such, some basis completes financial statements, financial managers and other users would be better off.

2. Hanafi and Halim, 2005:Analysis of a company's financial statements is basically done to determine the level of profitability (profit) and the level of risk or the level of a company's health. The easiest work in financial analysis of course calculates the financial ratios of a company.

3. Trotman and Gibbins (1998) Questions about the property, plant, and use of food, what is the cost basis for the guidelines. Changes to the computer program are the source of the money and the things money. This idea allowed us to sell non-cash or non-cash assets. is defined as the income and expenses and labor costs.

4. Soemarsono, 2005 The cash flow statement can provide information on changes in net assets, financial structure and the ability to

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Sales Promotion at Hindustan Coca Cola Beverages Pvt Ltd, Sri Kalahasthi

A. Muni Chandra, ***P. Ganesh

*Student of MBA, Annamacharya College, Tirupathi

**Asst. Professor, Dept. of MBA, Annamacharya College, Tirupathi

ABSTRACT

The importance of "SALES PROMOTION" in marketing mix is undeniable. Considering the cost of sale promotions are always substantial, the selection and design of most effective and efficient promotion tools are crucial for a successful promotion campaign. The ability of marketers to identify attributes which relevant to their target market is vital for them to have better control over the results of their promotional activities. This study is aims to examine the differences between both psychological-based segments and demographic based segments of consumers on their attitude and subjective norms toward the act of redeeming coupons, perception on coupon value and coupon expiration date, as well as their redemption intentions. This paper has been presented as per opinion of selected customer and also gathered information through secondary sources. It also aims to examine the relationship between attitudinal characteristics (attitude and subjective norms toward the act of redeeming coupon), coupon characteristics (coupon value and coupon expiration date) and redemption intentions. Popularity of 5 types of coupon distribution vehicles is also being examined.

Keywords: Sales promotion, Perception, Campaigns.

Introduction

"SALES PROMOTION" offers a direct inducement to act by providing extra worth over and above what is built into the product at its normal price. These temporary inducements are offered usually at a time and place where the buying decision is made. Not only are sales promotions very common in the current competitive market conditions, they are increasing at a fast pace. These promotions are direct inducements. In spite of the directness, sales promotions are fairly complicated and a rich tool of marketing with innumerable creative possibilities limited only by the imagination of promotion planners. Sales promotion is often referred to by the names of 'extra purchase value' and 'below-the-line selling'.

DEFINITION:

Business advancement is a promoting system wherein a business utilizes an impermanent mission or proposes to expand interest or interest in its item or administration. There are many motivations behind why a business might decide to utilize a deals advancement (or 'promotion'), yet the essential explanation is to support deals.

Factors influencing brand awareness

Factors Affecting Promotion Mix – 5 Major Factors:
Nature of the Product,
Nature of theCustomer,
Product Life Cycle,
Availability of Funds and a Few Others.
The promotion mix is an assortment of the four tools of marketing, i.e., personal selling, sales promotion, advertising and public relations.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Brand Awareness at Bharati Airtel Ltd, Tirupathi.

[1] P. Puja Nagendra Reddy, [2] P. Ganesh

[1]MBA Student, AITS, Tirupathi
[2]Asst. Professor, AITS, Tirupathi

ABSTRACT:

This paper reviews the relationship between a brand's awareness and the consumer's decision to purchase that product. It emphasizes how knowing a brand well will affect their decision in making the purchase, such as providing better customer service and allocating more funds towards marketing.

Keywords: Brand awareness, Purchase intention, consumer knowledge.

Introduction:

Brand awareness is a simple form of knowledge about a brand which includes at least recognizing the name of the company or knowing how they are recognized and what they produce. Brand awareness is the first thing a person thinks about when asked to recall any information about the company, but it is the simplest thing that consumers do not need to know much about. It plays an important role in making decisions on whether or not to buy something because it helps people recognize and recall what has been familiar to them before. Brands are powerful and popular in many academic discussions, from new product launches to brand awareness.

Factors influencing brand awareness:

Brands are powerful and popular in many academic discussions, from new product launches to brand awareness.

Name: The name of a brand is the first thing that attracts a consumer to it. If the company has an attractive brand name, consumers are encouraged to buy its products.

Advertising: Effective advertisement is necessary for organisations, as it increases their brand's awareness and brings in more customers.

Promotions & Sales: Giving away a free gift will make your product more popular and let people know about it.

Consumer's Purchase Intention: "A person who buys goods and services." Consumers play a vital role in the economic system, as they are willing to pay what a producer demands for their product. This is called consumer demand. If the demand goes away, producers will lose motivation, affecting the economic system. A consumer has purchase intention when they plan to buy a product of choice or service from a certain company.

Review of Literature

A brand is an important aspect of marketing. It creates a cognitive relationship between the consumers and the products, through which emotions are created and value is derived. Physiological dimension includes the lego or the symbol that creates a long lasting impression on people's minds.

Branding is a popular topic with academics and researchers who find it essential to creating new products and increasing brand awareness. A branded logo can help people develop a positive reaction to your product, which is more profitable than selling an unbranded item. The research shows that brands can increase brand awareness by showing off their logo to consumers. Brands use various strategies such as advertising and reviews to maintain their brand awareness. New products increase awareness by advertising themselves, while existing brands might instead choose attitude advertising or holding up their good image.

The behavior of customers is largely influenced by the elements of their value framework. A brand's experience, class association, price and awareness level in the market are among these values. Further research has shown that brands with higher levels of awareness are more prone to be re-purchased. (Macdonald et al., 2000)

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Consumer Awareness in Lg Company with Reference of Hs Enterprises, Tirupati

P.Ramya, ** P.Ganesh

*Student of MBA, Annamachjarya Institute of Technology & Sciences, tirupathi
**Assistant Professor, Annamachjarya Institute of Technology & Sciences, tirupathi

ABSTRACT:

This study examines the effect of consumer awareness on consumer attitude and consumer intention, the effect of consumer attitude on consumer intention, and the moderating effects of gender, age a activities. Consumer awareness education on the effect of consumer rights awareness on both consumer attitude and intention. Consumers are the largest economic group in any country. They are the central point of all economies being conscious of having knowledge about the various consumer production laws, redress mechanism and the consumer rights which include right to protection of health and safety from goods and services that the consumer buy, right to be informed about the quality, price, potency.

Key words: Consumer awareness, Consumer Responsibilities, consumer intentions.

Introduction:

A person who has indicated his or her willingness to obtain goods and/or services from the supplier with the intention of paying for them. Consumers can learn how to protect their privacy, analyse advertisements, recognize scams and become a smart can buyer and home buyer using online and offline resources. Spending the time to become an aware consumer is well worth the effort to avoid paying more than is necessary or worse, leaving your entire bank account and financial history open to attack Customer awareness is a concept used by marketing and sales teams.

Need and importance of consumer awareness:

There are many instances when a customer is not aware of their rights, such as with shoddy goods or illegitimate practices. Part of the responsibility that arises then falls on the government and regulatory agencies to educate customers about these products.

- Everyone wants to get everything they can with their income, but you can only get full satisfaction by limiting yourself. For this, it is necessary to be aware of the pricing and quality.
- A consumer is often exploited, by sellers and producers, for example through underweighting, taking higher prices than the market price, or selling a duplicate. However, a consumer always has the opportunity to remain knowledgeable about this exploitation.
- Consumers have more control over unhealthy purchases: There are several unhealthy goods, like cigarette and liquor, in the market which cause harm to some people. People are motivated not to buy these harmful goods thanks to consumer education and awareness efforts.
- Providing awareness motivates people to save money by not being attracted to offers like sales, discounts and free gifts. People can use their income in the best way and can save money.
- If a consumer does not know about their rights, they can be cheated so it is necessary for them to be made aware. They should also have knowledge of the laws so that they can solve problems.
- When everyone is a consumer, then the society will be healthy and aware. We can only have a healthy society when everyone knows and recognizes their rights.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Classifications of Cash Flow Statement

P. Sonia, ****P. Ganesh

*Student of MBA, Department of Management Studies, Annamacharya Institute of Technology and Sciences Tirupati.

**Assistant Professor, Department of Management Studies, Annamacharya Institute of Technology and Sciences Tirupati.

ABSTRACT:

The concentration on the Cash flow statement is a significant instrument to investigate the money position of a business firm. It can mean changes in real money position during two monetary years. It likewise gives data about the money receipts and money instalments of a business for a given period. It gives remarkable data that praises the benefit and misfortune record and asset report. A cash flow statement is about which gives a total clarification to the adjustment of a company's money during a specific period by determining the firm sources and uses of money during the period from operating, investing, and financing activities. It gives helpful data about an element's exercises in creating cash from tasks. It is trusted that the substance of this Article would assist the perusers with understanding the Cash flow statement appropriately, This Article is got ready in light of the different auxiliary sources.

Keywords: Cash flow, financial activities, Investing activities, Operating activities.

INTRODUCTION:

A cash Flow Statement is a summed-up assertion showing cash inflows and money outpourings of working, supporting, and contributing nature over a particular timeframe. It requires opening and shutting asset reports and furthermore benefit and misfortune accounts. Cash includes cash available and request stores with banks. Cash counterparts are present moment, profoundly fluid speculations that are promptly convertible into known measures of money and which are dependent upon an immaterial gamble of changes in esteem.
Incomes are inflows and outpourings of endlessly cash counterparts. Working exercises are the important income-delivering exercises of the undertaking and different exercises that are not money management or supporting exercises. Contributing exercises are the obtaining and removal of long-haul resources and different ventures excluded from cash reciprocals. Funding exercises are exercises that outcome in changes in the size and synthesis of the proprietors' capital and borrowings of the undertaking.

DEFINITION:

A cash flow statement is a financial statement that provides aggregate data regarding all cash inflows a company receives from its ongoing operations and external investment sources. It also includes all cash outflows that pay for business activities and investments during a given period.

REVIEW OF LITERATURE:

1. Charles, E. Jordan and Marilyn A. Waldron(2010) Based on payout interference for future wearable shoes, which is believed to be a good fit. As such, some basis completes financial statements, financial managers and other users would be better off.

2. Hanafi and Halim, 2005:Analysis of a company's financial statements is basically done to determine the level of profitability (profit) and the level of risk or the level of a company's health. The easiest work in financial analysis of course calculates the financial ratios of a company.

3. Trotman and Gibbins (1998) Questions about the property, plant, and use of food, what is the cost basis for the guidelines. Changes to the computer program are the source of the money and the things money. This idea allowed us to sell non-cash or non-cash assets. is defined as the income and expenses and labor costs.

4. Soemarsono, 2005 The cash flow statement can provide information on changes in net assets, financial structure and the ability to

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Customer Satisfaction in LG Company with Reference of HS Enterprises, Tirupati.

[1]AG. Suseela, [2]P. Ganesh

[1]Student of MBA, Annamacharya Institute of Technology & Sciences, Tirupathi.
[2]Assistant professor, Annamacharya Institute of Technology & Sciences, Tirupathi

ABSTRACT:

My undertaking report gives a short report, on what are Consumer loyalty and the methods for accomplishing Consumer loyalty. It centers around clients' insights. Fulfilling our clients is a fundamental component to remaining in business in this cutting edge universe of worldwide contest. Consumer loyalty is the critical variable for progress and relies profoundly upon the ways of behaving of cutting edge specialist co-ops. Clients ought to be overseen as resources, and clients change in their necessities, inclinations, and purchasing conduct.

Keywords: Customer Satisfaction, perceptions, behaviour.

INTRODUCTION

Consumer satisfaction is characterized as "the quantity of client or level of all out clients or whose revealed insight with a firm its items or its administrations (evaluations) surpasses determined fulfilment objectives "clients assume a significant part and fundamental in/keeping an item or administration pertinent. It is a term as often as possible utilized in promoting. .

Consumer loyalty is vital to each business, assuming the clients will fulfill the organization items and their quality consequently that organization run in the great manner.

Factors influencing Consumer satisfaction:

Purchaser reliability is the overall impression of client about the supplier and the things and organizations conveyed by the supplier.

1. Department wise capacity of the supplier.
2. Innovative and planning or re-planning portions of things and organizations.
3. Type and nature of response given by the supplier.
4. Provider's ability to commit on deadlines and how beneficially they are met.
5. Client help given by the supplier.
6. Objection the leaders.
7. Cost, quality, execution and adequacy of the thing.
8. Provider's own elements like habits and consideration.
9. Provider's ability to direct whole client life cycle.
10. Viable and trouble free capacities and errands.

The above components could be for the most part organized under two classes for instance suppliers lead and execution of thing and organizations. The supplier's approach to acting for the most part depends upon the approach to acting of its senior subordinates, bosses and inward agents. All of the viable activities like client response, direct thing and upkeep organizations, complaint the leaders, etc are the factors that rely on how gifted and arranged the internal and HR of the supplier are. The ensuing class is concerning all of the things and organizations. This depends upon the capacity of supplier to how to support the things and organization capably and how gifted the laborers are. Everything spins around how the capacities are completed to show planning, re-planning and creative pieces of the things and organizations. The quality and sufficiency of the things is in like manner a huge component

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Working Capital Management Dora Platics Pvt Ltd (Renigunta)

J.Bharath Kumar[1], P. Haritha[2]

*Student, MBA 2nd Year, Department of MBA, Annamacharya institute of Technology &Sciences: Tirupati
** Assistant professor Department of MBA, Annamacharya institute of Technology &Sciences: Tirupati,

ABSTRACT

Working capital management (WCM) is one of the maximum vital decisions for all corporations. The essential additives of WCM are days sales incredible (DSO), days inventory incredible (DIO), days payable remarkable (DPO), and cash conversion cycle (CCC). Using a sample of 332 Czech companies, inclusive of 20 licensed corporations from the EFQM (European Foundation for Quality Management) Model, the cutting-edge study explored the outcomes of the main additives of WCM on corporations' profitability. We used two specific regression models to test the speculation, i.E. Pooled regression and maximum likelihood estimation (MLE). The findings of the studies found out all the additives of WCM have a terrible effect on firm profitability. On the alternative hand, the interplay terms of the EFQM licensed corporations with the additives of WCM confirmed a tremendous impact on companies' profitability this means that that there's a wonderful dating between the components of WCM of the certified corporations and profitability. However, it's far examined that the satisfactory certificate/award from EFQM Excellence Model decreases the firm's profitability. The outcomes of the current research could be beneficial to lecturers, managers, leaders, and directors of the firms to improve their company's profitability.

1 INTRODUCTION

Working capital management includes the relationship between a organization's quick term property and its quick-term liabilities. The goal of running capital is toensurthatacompanyisabletocontinueitsoperationandthatithassufficientabilitytosatisfyboth maturing short-time period debt and upcoming operational fees. The control of working capital includes handling inventories, debts receivable and payable and coins management Working capital refers to the amount of capital this is comfortably available to an organisation. Organization wishes both-phrases and brief-term fund, Funds are needed for longterm functions of fixed property, which includes plant and machinery, land constructing, furnishings. Funds also are required for quick-time period cause like purchases of raw substances, price of wages and other day-to-day costs. The goal of operating capital management is to preserve the choicest stability of each of running capital components

MEANING AND DEFINITION

Working capital management is not an administration of all aspects of working capital, which manage the firm's current assets and current liabilities in such a way that a satisfactory level of working capital is maintained.

According to Smith "Working capital Management is concerned with the problems that arise in attempting to manage the current assets, current liabilities, and the inter-relationship that exists between them".

REVIEWOF THE LITERATURE

WORKING CAPITAL MANAGEMENT

•INTRODUCTION

Working capital can be seemed as the lifestyles blood of a business. Working capital Management is one of the most essential elements of Financial Management. It bureaucracy a major feature of the finance manager and accountant.

DEFINITION

• "Working Capital Represents the Excess of Current Assets over modern Liabilities and pick out the liquidity role of overall enter prizes. Aswathappa

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Employee Motivation in Heritage Food India Ltd at Chittor

***M. Manasa*[1], *P. Haritha*[2]**

Student of MBA[1] , Assistant Professor[2]

Annamacharya college, Tirupati. Department of Business Administration, Annamacharya college, Tirupati.

ABSTRACT:

In today's business environment as it is true with high job losses due to layoff and retrenchment to create a lean organization, it is also noteworthy for organizations to stop loses of performing employees due to decreasing job satisfaction and lack of motivation to continue with the organization for long. Motivated and satisfied employees will have committed approach towards organizational objective; in turn organizations will also have to show similar commitment towards employee objectives. It can be achieved by creating inspiring work environment which promotes and addresses employee need for growth and development. These factors although complex in nature and as they could not be addressed for individual employee basis as it may vary case to case it is important for HR to explore the common areas of intersection. Job satisfaction or employee motivation is studied not just to handle the turnover but also there are other adverse effects of dissatisfaction like absenteeism, low performance, lower morale, low contribution to the team, less coordination, less orientation towards organizational objective these could affect the organization capacity to compete in the highly competitive business environment. Hence the HR has to induce an organizational environment and promote organizational culture which takes in to consideration of the prevailing need.

KEY WORDS: Job satisfaction, Motivation, Human resource Management, worker commitment, organizational culture.

INTRODUCTION:

MOTIVATION:

Motivation is a Latin word meaning "to move" performance results from the Interaction (movement) of physical, financial & human resources. The first two are in Animate.They are translated unto productivity only when the human element in Introduced. When dealing with unanimated factors of production, management can accurately predict the input-output production. In dealing with employees an intangible Factor of will, freedom of choice is introduced and workers can increase or decreases their Productivity as they choose this human quality gives rise to motivation.

DEFINITION:

According to Berelson and Steiner state that "motive is an inner state that energizes activates or moves and directs of channels behaviour towards goals.

Human motives are internalized goals within individuals when there is strong positive Motivation, the employee's output increases but when there is negative or weak positive Motivation, his performance level is low. Motivation is an interviewing variable for it cannot be seen bared or felt and can only be inferred from behaviour. For example, Motivational feelings such as hunger, power, will etc. cannot be seen it is a psychological phenomenon, which generates within oneself.

IMPORTANCE OF MOTIVATION:

In the direction process, motivation is one of the important elements by motivating the Employees there are guided in the desired way to enable them to achieve the Organizational objectives. For performing a job two important things are necessary viz, will to work & ability to work. The important of motivation lies in converting this ability to work into the will to work. Without the willingness, ability to work is of no use. Hence, there is a need for motivation a person to do his job performance depends on ability and willingness depends on motivation. Motivation but also in not only increasing the efficiency and output of employees. It also deist in reducing employee turnover and absenteeism by making them realize their goals.

NEED FOR THE STUDY

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Capital Budgeting on APSPDCL at Tirupati

D. Renuka[1], P. Haritha[2]

[1]Student, II-year MBA , [2]Assistant Professor, MBA Department, Annamacharya Institute of Technology Tirupati,

ABSTRACT

'The capital budget is essentially a list of what management believes to be worthwhile projects for the acquisition of new assets together with the estimated cost of each project."

Investment decisions are generally known as capital budgeting or capital expenditure decisions. It is clever decisions to invest current in the long-term assets expecting long-term benefits firm's investment decision would generally include expansion, acquisition, modernization and replacement of long-term assets

DEFINITIONS:

The investment decisions of a firm generallyknown as the capital budgeting or capital expenditure decisions. The capital budgeting decision may be defined as the firm's decisions to invest its current funds most efficiently in the long- term assets in anticipation of an expected flow of benefits over a series of year.

-- I M PANDEY

Capital budgeting is the planning of capital expenditure on long term projects whose returns spread over several years.

--SC. Siva Rami Reddy

Capital budgeting is long term planning for making and financing proposed capital outlays.

-- T. Horn green

Capital budgeting is the process of evaluating and selecting long term investment that is consisted with the goal of shareholders (owners) wealth maximization.

-- M Y KHAN / P K JAIN

PROCESS OF CAPITAL BUDGETING:

The process of capital budgeting can be divided into four types. They are

- Project generation
- Project evaluation
- Project selection
- Project execution

PROJECT GENERATION:

Investment proposals originate at different levels like top level, middle level, and lower level. The investment proposals can be formed the following purpose.

- To add new products to the existing products
- Expanding capacity
- To reduce cost of production

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Consumer Behaviour in LG Company with Reference of HS Enterprises.

[1]R. Sailakshmi, [2]P. Haritha

[1]Student of MBA, Annamacharya college, Tirupati.
[2]Assistant Professor, Department of Business Administration, Annamacharya college, Tirupati.

ABSTRACT:

Consumer behavior involves the psychological processes that consumers go through in recognizing needs, finding ways to solve these needs, making decisions about the customers. Customer behavior is very important concept once to know about the behavior of customer to attract more customers in our company products and easily sell their parents to customers easily.

Keywords: consumer behavior, consumer attitudes, consumer perceptions.

Introduction:

Consumer behavior is helpful in understanding the purchase behaviour and preferences of different consumers. As consumers, we differ in terms of sex, age, education, occupation, income, family setup, religion, nationally and social status. Because of this different background factors, we have different needs and we only buy those products and services, which we think, will satisfy our needs. In today's world of rapid changing technology, consumer tastes are also characterized by fast changes. To survive in the market, a firm has to be constantly implement innovations and has to understand the latest consumer trends and tastes. Consumer behaviour provides invaluable clues and guidelines to marketers on technological frontiers, which they should explore.

A consumer's decision to purchase a particular product of service is the result of complex interplay of a number of variables. The starting point of the decision process is provided by the companies marketing stimuli in the shape of product, promotion, price, and distribution strategy. Consumer's often purchase new products that are associated that a favorable viewed brand name.

This present study is to identify the level of satisfaction and the behavior of customers towards the LG in Tirupati region.

These characteristics can be shown as below:

a. The Consumer is a King
b. The Consumer's Behavior can be known
c. The consumer's behavior can be influenced

Why study consumer behavior?

a. It will help to segment the market usefully
b. It will aid in development of an effective marketing mix
c. It will help to assess new market opportunities.

NEED FOR THE STUDY

Consumer behavior is important because it helps marketers understand what influences consumers' buying decisions. By understanding how consumers decide on a product, they can fill in the gap in the market and identify the products that are needed and the products that are obsolete.

WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Working Capital Management Srikalahastipipes Ltd (Ecl-Kolkata)

D. Srikanth [1*], P. Haritha[2]

[1]Student, MBA 2nd Year, Department of MBA, Annamacharya institute of Technology &Sciences: Tirupati
[2] Assistant professor Department of MBA, Annamacharya institute of Technology &Sciences: Tirupati,

ABSTRACT: -

Working capital management defines how much of funds used on regular business activities. This article defines working capital efficiency in the organization. The working capital can be classified, as funds needed for carrying out day to day operations of the business smoothly. The management of the working capital is equally priority as the management of long-term financial investment. It is also concerned with maintaining liquidity in the business to make surefor smooth running of day-to-day operations and to meet its financial obligations.

INTRODUCTION:

Finance is regarded as the life-blood of a business enterprise. This is because in the modern money-oriented economy, finance is one of the basic foundations of any kinds of economic activities. It is the master-key which provides access to all the sources for being employed in manufacturing merchandising activities. It has rightly been said that,

"Business needs money to make more money"

However it is also true that money begets more money, only when it is properly managed. Hence efficient management of every business enterprise is closely linked with efficient management of its finance.

MEANING OF FINANCIAL MANAGEMENT

"Financial management is concerned with efficient use of important economic resources, namely capital funds.

-Soloman

"Financial management is concerned with the managerial decisions that result in the acquisition and financing of long term and short term credits for the firm .The analysis of these decisions is based on the expected inflows and outflows of funds and their effects upon managerial objectives."

Phillipatus

FINANCE FUNCTIONS

It may be difficult to separate the finance functions from production, marketing and other functions, but the functions themselves can be readily identified. The functions of raising funds investing them in assets and distributing returns earned from assets to shareholders are respectively known as.

1. Investment Decision
2. Financing Decision
3. Dividend Decision
4. Liquidity Decision

GOALS OF FINANCIAL MANAGEMENT

- Maximize the value of the firm to its equity shareholders.
- Maximization of profit
- Maximization of earnings per share.
- Maximization of return on equity (defined as equity earnings/net worth)

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Customer Relationship Management in LG company with Reference HS Enterprise, Tirupati.

[1]E. Supriya, [2]P. Haritha

[1]Student of MBA, Annamacharya college, Tirupati.
[2]Assistant Professor, Department of Business Administration, Annamacharya college, Tirupati.

ABSTRACT:

Now a days In a highly competitive market, companies main need is to maintain positive relationship with their customer. A good CRM (customer relationship management) program that helps company in satisfying the customer, the research study would define different methods and techniques for establishing effective CRM to satisfy the customers. The purpose of the study was to check the effectiveness of customer relationship management (CRM) in retaining and satisfying customers, this Customer Relationship management is the strongest and the most efficient approach in maintaining and creating relationships with customers.

Keywords: Customer Satisfaction, Customer relations, CRM

Introduction:

Customer relationship management (CRM) is an approach to manage a company's interaction with current and potential customers. It uses data analysis about customers' history with a company to improve business relationships with customers, specifically focusing on customer retention and ultimately driving sales growth. One important aspect of the CRM approach is the systems of CRM that compile data from a range of different communication channels, including a company's website, telephone, email, live chat, marketing materials and more recently, social media. Through the CRM approach and the systems used to facilitate it, businesses learn more about their target audiences and how to best cater to their needs.

DEFINITION:

Customer relationship management (CRM) is the combination of practices, strategies and technologies that companies use to manage and analyze customer interactions and data throughout the customer lifecycle, with the goal of improving customer service relationships and assisting in customer retention and driving sales growth. CRM systems compile customer data across different channels, or points of contact between the customer and the company, which could include the company's website, telephone, live chat, direct mail, marketing materials and social media. CRM systems can also give customer-facing staff detailed information on customers' personal information, purchase history, buying preferences and concerns.

NEED FOR THE STUDY

The study was focused on customer relationship management to know the customers opinions, wants ,perception towards quality and problems. And to improve my knowledge in the segment of customer relationship through study of CRM of LG company .It has wide scope to understand and illustrate this CRM in a depth manner.

SCOPE OF THE STUDY:

The study has been conducted in the tirupati area only. The study is useful to know the customer preference and their reason to prefer LG products. This study is useful to improve the relationship with customers by the company. And also useful to know what the customers are expecting from the company.

LIMITATIONS OF THE STUDY:

- The study was to restricted to Tirupati area only
- The duration of the project confined to only 45 days, so time was major constraints.
- The sample size for survey is limited. AS the questionnaire was conducted; certain factors could not be studied in depth.

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Financial Performance of Electrosteel Castings Pvt Ltd, at Srikalahasthi

[1]Y. Vasu, [2]P. Haritha

[1]MBA, Annamacharya institute of Technology and Science, Tirupati
[2]Assistant Professor, MBA Dept., Annamacharya institute of Technology and Science, Tirupati

ABSTRACT

The study entitled the financial performance analysis an Company. The objective of this study is to compare the current financial performance with last five years and to study the existing financial position of Company. The data used in this study is secondary data through annual report. The data that used in this study, comparative balance sheet, common size balance sheet, comparative balance sheet analysis ,that the current liabilities is higher than the current asset in every year and it is to be suggest that the company can concentrate on their increasing the level of the current asset. So the company improves this financial position. The study of financial performance on The Company has revealed the great deal of their various financial aspects for five years. The comparative analysis unlocks the overall performance methodology

INTRODUCTION TO FINANCIAL PERFORMANCE

Financial statements are prepared primarily for decision-making. They play a dominant role in setting the framework of managerial decision. But the information provided in the financial statements is not an end in itself as on meaningful conclusion can be drawn from these statements is of immense use in making decision through analysis and interpretation of financial statements. Financial analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing relationship between the items of the balance sheet and the profit and loss account. There are various methods or techniques used in analyzing financial statement, such as comparative statements schedule of changes in working capital common-size percentages, funds analysis, trend analysis and ratio analysis. The Financial Performance is the most powerful tool of financial analysis.

REVIEW OF LITERATURE

Financial management is planning, organizing, directing and controlling of various financial activities of the organization. In order to perform all the managerial functions effectively and efficiently, a proper analysis and understanding of the relationship between the elements of financial statements plays a crucial role. This relationship can be derived and better understood from ratio analysis.

Main purpose of Financial Performanceis establishing a significant relationship between the items of financial statements to provide a meaningful understanding of the performance and financial position of a company.

A substantial portion of information required in financial decision – making is Financial statements also help in forecasting the financial effects of planning.

Financial Performancerefers to the process of the critical examination of the financial information contained in the financial statements. The process of dissection, establishing relationship and interpretation thereof to understand the working and financial position of a company is termed as the ratio analysis. Even it is a process of establishing and identifying the financial weaknesses and strength of the company.

NEED FOR STUDY

- The choice of area of the study for the project work was given after initial study of company's operations and the system of working.
- With the help of financial performance to evaluate the pattern of the firm.
- The financial performance reveals clearly the cause fo the financial difficulties of the company
- With the financial performance can utilizing its assets in generating sales revenue

IJRAR.ORG E-ISSN: 2348-1269, P-ISSN: 2349-5138

INTERNATIONAL JOURNAL OF RESEARCH AND ANALYTICAL REVIEWS (IJRAR) | IJRAR.ORG

An International Open Access, Peer-reviewed, Refereed Journal

IMPACT OF WORK FROM HOME CULTURE ON WORK LIFE BALANCE – AN EMPIRICAL STUDY ON IT/ITES EMPLOYEES

***Dr.K.Haritha** ****Dr.C.Nadhamuni Reddy**

*Associate Professor & HOD, Department of MBA, Annamacharya Institute of Technology & Sciences:: Tirupati

**Principal, Annamacharya Institute of Technology & Sciences:: Tirupati

Abstract

Many IT companies are asking their employees to work from home to remain safe and affected. As corona virus (COVID19) continues to capture headlines in the news and spread rapidly, employees are struggling with finding a sense of calm and stability throughout the ever changing updates and reality. Working from home has many benefits, some being flexibility, increased productivity and more quality time with your loved ones. Work life balance, especially during uncertain times like COVID19, is essential to employees' growth and personal happiness and company retention. When employees are encouraged to find positive work life balance, they tend to be more motivated to produce great work.

This also edibility among the employees over performance increases of work. Work from home enables more autonomy in job, which is likely to be associated with more productivity. Decreased control by colleagues or the supervisors is an important drawback of work from home. This is true for both the organization and the employee. The work avoidance is the result when someone's work is poorly monitored. Work from home will be helpful when there are issues to attend of work should continue. Most of the IT companies included work from home in their leave policy of employees in order to increase the productivity.

Keywords: Work from home, Work life balance, Strategies to work life balance

Introduction

The beginning of the year 2020 was marked by a major global public health crisis. The Corona virus Disease (COVID-19) that supposedly originated from Wuhan in China during December 2019 made its presence felt in more than 100 countries by the first week of March 2020. On March 12, 2020, World Health Organization (WHO) characterized COVID-19 as a "controllable pandemic" (WHO, 2020, COVID-19 Situation Report-52, 12th March). In India, the first cases of COVID-19 was reported on 30 January 2020, and by mid-March a total of 25 confirmed cases were reported.

On 24 March, Indian Prime Minister announced a 21 days' nationwide lockdown till 3 April 2020, which got further extended till 3 May 2020. Following the Government's mandate, some of the industries made their employees "Work from Home" (WFH) during this lockdown period. WFH, also known as telecommuting or telework (Bloom et al., 2015), has now become a popular practice due to the advancement in information and communication technologies (ICTs). Telecommuting enables employees to perform the tasks allocated at the workplace by being at a place away from the normal workplace (Gajendra and Harrison, 2007). Some employees prefer WFH as it helps in attaining work–life balance (WLB), but managers become sceptical as it could lead to shirking from assigned responsibilities while being home(Bloom et al., 2015). COVID-19-induced lockdown has forced businesses to run through WFH. After the announcement of nationwide lockdown in India to contain the spread of the infection, WFH policy was opted by the majority of organisations. During this lockdown, the scenario at home was quite

Chemical Thermodynamics and Thermal Analysis 8 (2022) 100076

Contents lists available at ScienceDirect

Chemical Thermodynamics and Thermal Analysis

journal homepage: www.elsevier.com/locate/ctta

Synthesis, spectroscopic characterization and apparent molar properties of ethanolammonium based ionic liquids with DMSO

N. Hari Krishna [a], S. Karlapudi [b], Ch Bharath Kumar [c], R.L. Gardas [d], K. Sivakumar [b,*], P. Venkateswarlu [e]

[a] Department of Chemistry, J. N. T. University Anantapur, Ananthapuramu, AP 515002, India
[b] Department of Chemistry, S.V. Arts Degree & P.G. College (T.T.D'S), Tirupati, AP 517502, India
[c] Department of Chemistry, Neil Gogte Institute of Technology, Hyderabad, Telangana 500088, India
[d] Department of Chemistry, Indian Institute of Technology Madras, Tamilnadu 600036, India
[e] Department of Chemistry, S. V. University, Tirupati, AP 517502, India

ARTICLE INFO

Keywords:
Density
Speed of sound
Ionic liquid
DMSO
Redlich-mayer equation

ABSTRACT

The density (ρ) and speed of sound (u) of binary solutions containing protic ionic liquids such as N-butyl ethanolammonium acetate [NBEA][Ace] and N-butyl ethanolammonium propionate [NBEA][Pro] with Dimethyl Sulfoxide (DMSO) were determined over a temperature range of (293.15 to 318.15) K at intervals of 5 K at 0.1 MPa pressure. The apparent molar volume (V_φ), isentropic compressibility (k_s) and apparent molar isentropic compressibility ($k_{s,\varphi}$) were estimated using the measured data. The apparent molar volume (V_φ^∞) and apparent molar isentropic compressibility (k_φ^∞) at infinite dilution, as well as the related empirical parameters (S_v, B_v, S_k and B_k), were calculated using the Redlich-Mayer type equation. The solute-solute and solute-solvent interactions are indicated by the obtained limiting apparent molar volume and limiting apparent molar isentropic compressibility. Furthermore, the apparent molar expansibility at infinite dilution was calculated using temperature dependent apparent molar volume at infinite dilution (E_φ^∞).

1. Introduction

Ionic liquids (ILs) are molten salts that are liquids at room temperature and have a melting point of less than 100 °C [1–3]. Organic cations such as imidazolium, pyrrolidinium, pyridinium, ammonium, and organic or inorganic anions such as acetates, sulphates, phosphates, halogens, and others form ionic liquids. Because of their low vapor pressure, high ionic conductivity, high thermal stability, nonflammability, and high solvating capacity for both polar and non-polar compounds, ILs are a new class of liquids that have emerged as "green" and are leading to environmentally friendly and more sustainable solvents and hence these are treated as designer solvents [4–8]. ILs' distinct physical and chemical features have led to a wide range of research topics and applications. In addition, the applications of ILs necessitate the knowledge of thermophysical properties of pure ILs as well as solvation behavior in organic solvents [9–11]. These characteristics are critical in the design and control of chemical processes that use ILs [12–16]. The degree of various intermolecular interactions among both solute and solvent molecules can be used to explain the solvation behavior of ILs in organic solvent.

In chemical engineering calculations involving fluid flow, mass transfer, and heat transfer, the interactions between ILs and organic solvents are critical [17–19]. Many studies have used density (ρ), sound speed (u), and relative physico-chemical parameters like apparent molar volume and isentropic compressibility to better understand the interactions between the ion-ion and ion-solvent [20–23]. Furthermore, understanding the columbic contacts, dipole-dipole interactions, and hydrogen bonding interactions that occur in pure ILs and their mixes with molecular solvents requires these thermodynamic and thermo-physical features [24,25]. The hydroxyl-functionalized ILs may dissolve inorganic salts, polymers, and can be used to make effective nanoparticle stabilizers [26,27]. These ILs were found to have potent antimicrobial action against a variety of human diseases [27]. These ionic liquids also form micelles in aqueous media and display amphiphile self-assembly as a solvent medium [28,29].

To the best of our knowledge no density or speed of sound data on binary mixes of N-butyl ethanolammonium acetate [NBEA][Ace]

* Corresponding author.
E-mail address: sivakumark78@gmail.com (K. Sivakumar).

https://doi.org/10.1016/j.ctta.2022.100076
Received 15 June 2022; Received in revised form 12 August 2022; Accepted 14 August 2022

DOI: 10.55522/jmpas.V11I2.2621 ISSN NO. 2320–7418

International peer reviewed open access journal

Journal of Medical Pharmaceutical and Allied Sciences

Journal homepage: www.jmpas.com CODEN: JMPACO

Research article

Biological studies of Schiff base, 2-(1-hydroxycyclohexyl) phenyl methylene hydrazine carbothioamide and its Cu(II) and Zn(II) metal complexes

Prasuna M Kamatam[1], Vanitha Sanambatla[1], Seshaiah Kalluru[2]*

[1] Department of Chemistry, JNTUA University, Ananthapuramu, Andhra Pradesh, India
[2]Department of Chemistry, SV University, Tirupati, Andhra Pradesh, India

ABSTRACT

Condensation of 1-hydroxycyclohexyl phenyl ketone with hydrazine carbothioamide produced a new Schiff base, 2-(1-hydroxycyclohexyl) phenyl methylene hydrazine carbothioamide. The Cu(II) and Zn(II) metal complexes of the Schiff base were prepared. The different spectroscopic methods such as FT-IR, UV-Visible, ^{1}H NMR, and ^{13}C NMR spectroscopy were used to elucidate the structural characteristics of the synthesized compounds. Further, the biological applications of the prepared Schiff bases and its metal complexes were studied for the antibacterial activity. The antimicrobial investigation was carried out against different Gram positive and Gram negative bacteria like *Bacillus subtilis, Staphylococcus aureus, Escherichia coli, Pseudomonas aeruginosa*. According to the findings, the prepared Cu(II) and Zn(II) metal complexes are more biologically active than Schiff base ligand, and among all tested bacterial species, *Staphylococcus aureus* growth was most inhibited by prepared compounds.

Keywords: 1-hydroxycyclohexyl phenyl ketone, Hydrazine carbothioamide, Schiff base, Cu (II), Zn (II)

Received - 21-12-2021, Accepted- 24-03-2022

Correspondence: Seshaiah Kalluru* ✉ seshaiahsvu@gmail.com

Department of Chemistry, SV University, Tirupati, Andhra Pradesh, India

INTRODUCTION

The complexes of Cu(II) and Zn(II) ion containing Schiff bases possess remarkable properties as catalysts in various biological systems, antimicrobial activities, antiviral activities, antifungal activities, anti-inflammatory activities, antiradical activities, insecticidal activities, antitumor and cytotoxic activities [1-6]. They are also useful in the disciplines of analytical chemistry, agrochemistry, pharmaceuticals, polymers, and dyes [7]. The importance of this metal complexes as essential bioactive chemicals *in vitro* and *in vivo* has sparked a surge of interest in these compounds as possible treatment agents for a variety of ailments [8].

In coordination chemistry, Schiff bases are most frequently utilised as chelating ligands [9]. Schiff bases with donor atoms such as N, O, S, etc. exhibit structural similarities to neutral biological systems and are used in biological systems owing to the existence of an imine group [10-12]. Thiosemicarbazide and its derivatives as ligands with possible sulphur and nitrogen atoms are interesting and have gotten a lot of attention, not only for their structural chemistry but also for their usefulness in the medical and pharmaceutical fields. Antibacterial [13], antitumor [14], antifungal [15], antiproliferative [16], antidiabetic [17], herbicidal [18], anticancer [19], anti-inflammatory [20] actions are among the biological activities shown by these compounds. Because they are used as starting materials in the synthesis of commercial goods, Schiff bases are an important family of chemicals. Schiff bases are also considered as favoured ligands because of their capacity to form complexes with various transition metals and serve as catalysts in a variety of processes [21-23]. The chelating ability of the thiosemicarbazide moiety is good, and this feature can be improved in thiosemicarbazone by inserting a suitable aldehyde or ketone with an additional donor atom to make the ligand polydentate. Anticancer and antibacterial properties have been documented for many Schiff base transition metal complexes [24,25]. Some medications have been observed to have more action when supplied as metal complexes rather than as free molecules. As a result, Schiff base transition metal complexes may provide an undiscovered source of medicines [26]. Complexes of transition and non-transition metals with Schiff base ligands have recently emerged as promising materials for electronic applications, owing to their excellent photo and electroluminescent properties, as well as their ease of synthesis, which allows for structural modification for material optimization [27]. These are intensively investigated because to their flexibility, selectivity and sensitivity towards the central metal atom, structural and biological similarities, and the inclusion of an imine group (-C=N-) that confers biological activity [28-30].

Owing to its antimicrobial properties of the Schiff bases

Received: 13 January 2022 | Revised: 11 March 2022 | Accepted: 4 April 2022

DOI: 10.1002/htj.22550

ORIGINAL ARTICLE

HEAT TRANSFER WILEY

Three-dimensional non-Newtonian couple stress fluid flow over a permeable stretching surface with nonlinear thermal radiation and heat source effects

Nainaru Tarakaramu[1] | **Panyam Venkata Satya Narayana**[2] | **Ramalingam Sivajothi**[3] | **Kuresi Bhagya Lakshmi**[1] | **Dondu Harish Babu**[4] | **Bhumavarapu Venkateswarlu**[5]

[1]Department of Mathematics, Humanities and Basic Sciences, Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh, India

[2]Department of Mathematics, School of Advanced Sciences, Vellore Institute of Technology, Vellore, Tamil Nadu, India

[3]Department of Mathematics, R L Institute of Management Studies, Madurai, Tamilnadu, India

[4]Department of Mathematics, Sree Vidyanikethan Engineering College, Tirupati, Andra Pradesh, India

[5]Department of Mathematics, Walchand Institute of Technology, Solapur, Maharashtra, India

Correspondence
Nainaru Tarakaramu, Department of Mathematics, Humanities and Basic Sciences, Annamacharya Institute of Technology and Sciences, Tirupati, Andhra Pradesh 517520, India.
Email: nainaru143@gmail.com

Abstract

This study is a study of three-dimensional couple stress Casson fluid flow with nonlinear thermal radiation and heat source effects. The convective heat and mass transfer analysis is applied to a porous stretching sheet. In fluid flow direction, a uniform magnetic field can be applied. Using the similarity transformations, nondimensional expressions are achieved. The obtained equations are found numerically via the shooting technique as well as Runge-Kutta-Fehlberg method in MATLAB software. The contribution of different physical parameters is explored and discussed. Such parameters are porous parameter, couple stress parameter, heat source parameter, nonlinear thermal radiation, temperature parameter, and Lewis number. We found, the decreasing rate of heat transfer in the case of couple stress fluid motion when comparing Casson fluid flow with various values of Γ_1 and Pr.

KEYWORDS

Casson fluid, chemical reaction, convective conditions, couple stress, heat source, nonlinear thermal radiation, non-Newtonian fluid, porous medium

DOI: 10.55522/jmpas.V11I1.2451 ISSN NO. 2320–7418

International peer reviewed open access journal

Journal of Medical Pharmaceutical and Allied Sciences

Journal homepage: www.jmpas.com CODEN: JMPACO

Research article

Antimicrobial and antioxidant studies of Schiff base, 2-(2-hydroxy-2-methyl-1-phenylpropylidene) hydrazine carbothioamide and its mixed ligand cd (II) complexes

Vanitha Sanambatla[1], Sathish Kumar Nara[2], Balaji Hari[2], Varada Reddy Ammireddy[2], Saritha Nimmakayala[3]*

[1]J. N. T. U. Anantapur, ananthapuramu, India

[2]S.V. University, Tirupati, Andhra Pradesh, India

[3]J. N. T. U. A. College of Engineering, Kalikiri, Andhra Pradesh, India

ABSTRACT

New mononuclear mixed ligand Cadmium(II) complexes of the type [Cd(L)(diimine)] (1,2) [where L = 2-(2-hydroxy-2-methyl-1-phenylpropylidene)hydrazinecarbothioamide; diimine = 2,2'-bipyridine (1), 1,10-phenanthroline (2)] have been synthesized and characterized by spectroscopic techniques such as FT-IR, UV-Visible, and ^{1}H and ^{13}CNMR Spectroscopy. From the investigations of spectral data, it is evident that the heterocyclic bases (2,2'-bipyridine and 1,10-Phenanthroline) act as neutral bidentate ligand coordinating to the metal ion through two nitrogen donor atoms addition to azomethane nitrogen, thiolate Sulphur, and hydroxyl oxygen in the Schiff base ligand. The synthesized Schiff base metal chelates have been screened for their anti-microbial activities using the agar well diffusion method against different selected types of bacteria and fungi in addition to antioxidant activity. The prepared Schiff base ligand and its metal complexes exhibited good antimicrobial and antioxidant activities. The antibacterial and antifungal efficacy of Complex-1 was higher than that of all the prepared compounds. In the case of antioxidant activity, Complex-2 has stronger scavenging activity among them.

Keywords: Cd (II) metal complexes, 2,2'-Bipyridine, 1,10-Phenanthroline, Antimicrobial activities.

Received - 20-11-2021, Accepted- 20-01-2022

Correspondence: Dr. N Saritha Nimmakayala* ✉ sarithanphd@gmail.com

Department of Chemistry, J. N. T. U. A, College of Engineering, Kalikiri, Andhra Pradesh, India.

INTRODUCTION

Because of the pharmacological properties of both the ligands and the complexes, the synthesis of transition metal complexes with thiosemicarbazone ligands has received a lot of attention [1]. Thiosemicarbazone ligands typically coordinate to metals via oxygen, nitrogen and Sulphur donor atoms in their (N, S) bidentate form or (N, N, S or O, N, S) tridentate form, resulting in metal complexes with varying molecular geometries [2]. Such complexes are especially important because of their potential biological benefits, such as anticancer [3], fungicidal [4], antibacterial [5], antiviral [6], antifungal [7,8], antitumor [9], and other biological activities [10], particularly with the first row of transition metal complexes. Free ions are more hazardous than their metal complexes due to the lack of bioavailability of the metal. Taking this into account, researchers have been looking at the biological functions of new cadmium Schiff base metal complexes [11-16]. These have also been proved as effective antibacterial agents due to the presence of active biological strains [17]. With this perspective, the current research focused on cadmium based mixed ligand metal complexes.

Because of their structural diversity and wide range of applications, mixed-ligand complexes receive a lot of attention in coordination chemistry. Mixed-ligand compounds also have a wide range of biological applications [18].

In the present work, 2-(2-hydroxy-2-methyl-1-phenylpropylidene) hydrazine carbothioamide and heterocyclic bases like 2, 2'-bipyridine and 1,10-phenanthrolinehave been used as co-ligands for the synthesis of cadmium (II) complexes was carried out. Synthesis, structures, spectroscopy and antimicrobial aspects of complexes are investigated.

MATERIALS AND METHOD

Chemicals

The starting materials such as 2-Hydroxy-2-methylpropiophenone, thiosemicarbazides and heterocyclic bases like 2,2'-bipyridine, and 1,10-Phenanthroline were acquired from Sigma Aldrich, India. Cd (II) salt in the form of $CdCl_2 \cdot 2H_2O$ was purchased from S. D. Fine chemicals. The organic solvents like acetonitrile, methanol, ethanol, dichloromethane was purchased from Merck, which were not subjected to any further purification process.

INORGANIC AND NANO-METAL CHEMISTRY
https://doi.org/10.1080/24701556.2022.2068588

Synthesis, spectral characterization, and biological studies of Schiff bases and their mixed ligand Zn(II) complexes with heterocyclic bases

S. Vanitha[a], N. Sathish Kumar[b], K. Reddi Mohan Naidu[c], M. Balaji[d], A. Varada Reddy[b], and N. Saritha[e]

[a]Department of Chemistry, J. N. T. University, Ananthapuramu, A.P., India; [b]Inorganic and Analytical Division, Department of Chemistry, S.V. University, Tirupati, A.P., India; [c]Department of Science and Humanities, S. V. Engineering College, Tirupati, A.P., India; [d]Department of Biochemistry, S.V. University, Tirupati, A.P., India.; [e]Department of Chemistry, J.N.T.U.A. College of Engineering, Kalikiri, A.P., India

ABSTRACT

In the present study, six mononuclear Zinc(II) complexes, [Zn(L1)(6-Methyl-2,2′-bpy)] (1), [Zn(L1)(1,10-Phen)] (2), [Zn(L1)(5-Amino-1,10-Phen)] (3), [Zn(L2)(6-Methyl-2,2′-bpy)] (4), [Zn(L2)(4,4′-Di-tert-butyl-2,2′-bpy)] (5), and [Zn(L2)(1,10-Phen)] (6) formed from Schiff bases, 2-methyl-1-phenyl-1-(pyridin-2-ylmethylimino)propan-2-ol (L1) and 4-chloro-5-methyl-2-(1-(pyridin-2-ylmethylimino)ethyl)phenol (L2) were synthesized. The synthesized Schiff base ligands and metal complexes were characterized by different spectroscopic techniques such as FTIR, UV–Visible, ^{1}H & ^{13}C NMR spectroscopy, in addition to Powder X-ray diffraction and cyclic voltammetry. Further, the synthesized metal complexes (1–6) and their parental Schiff bases (L1, L2) were evaluated for antibacterial, antifungal, and antioxidant activities. Of those, Complex 1 was shown to have significant antibacterial activity against all of the evaluated microorganisms. Schiff base ligands, L1 and L2, complexes 1, 4, and 5 were shown to have superior antifungal activity against *Aspergillus niger* than the standard drug, fluconazole. In addition, the synthesized compounds achieved good antioxidant activities when compared to the standard Ascorbic acid.

ARTICLE HISTORY
Received 6 November 2021
Accepted 27 March 2022

KEYWORDS
Zn(II) complex; 6-methyl-2,2′-bipyridine; 4,4′-Di-tert-butyl-2,2′-bipyridine; 1,10-Phenanthroline; Schiff base

Introduction

Tridentate Schiff bases with NNO donor atoms (N = Nitrogen, O = Oxygen) have long been known for their ability to coordinate with a variety of metal ions, and their diverse coordination chemistry has picked up great interest in the recent years.[1] Chelating ligands with N, N, and O donor atoms have a wide range of biological activities, including anticancer,[2] antibacterial,[3] antimalarial,[4] antiviral,[5,6] antifungal,[7,8] and antioxidant[9] properties owing to its ability to bind with a wide range of transition metal ions.[10] Metal ions in coordination with ligands showed increased activities in bacterial, fungal and antioxidant properties.[11] They are also employed as catalysts in the polymer and dye industries, as well as for antifertility and enzymatic agents as building blocks for synthetic and natural oxygen carriers.[12]

Pyridines were significant heterocyclic bases in synthetic intermediates and agrochemicals such as amido, alkoxyl pyridine, and its derivatives.[13] Additionally, pyridine derivatives play a distinctive role in acaricide, anthelminthic, phytocide, and bactericide.[14] Based on this potent importance of pyridine compounds, we have chosen pyridine ligand as a starting base material for the synthesis of Schiff bases.[15,16] The biological physiognomies of the ligand and metal ion moieties extensively coordinate with Schiff bases.[17] Most of the nitrogen-containing heterocyclic compounds are found in a wide range of natural products, fine chemicals, and physiologically active medications that improve people's lives.[18] Furthermore, the mixed ligand complexes were demonstrated in biological field in which enzymes are activated by metal ions.[19,20] Schiff base ligands and their metal complexes have a broad range of applications in the biological, therapeutic, analytical, and industrial sectors.[21–23] Owing to their pharmacological characteristics, heterocyclic Schiff base ligands and their metal complexes with pyridine bases are of particular interest in current research trends.[24]

Zinc is a bio-essential metal ion in biological systems, engaged in a variety of biological processes, and their complexes have been extensively studied for their considerable cytotoxic, catalytic, and antibacterial activity.[25] It is also a significant metal cation owing to its functioning of roughly 300 enzymes that catalase around 50 key cellular metabolic activities and also used as catalysis, protein building blocks.[26,27] It also inhibits the growth of microorganisms such as *Escherichia coli*, *Streptococcus faecalis*, *Staphylococcus epidermidis*, *Staphylococcus aureus*, and *Pseudomonas aeruginosa*.[28] In most of the cases, the interaction of metal ions with ligands increases the biological activity.[29] The structural activity is due to the oxidation state of metal, number of donor atoms, and the bonding sites of the ligand.[30]

In the view of biological activities of pyridine tridentate ligands and Zn(II) metal complexes, in the present study, we have attempted to synthesize the tridentate Schiff bases namely, 2-methyl-1-phenyl-1-(pyridin-2-

CONTACT N. Saritha sarithaphd@gmail.com Department of Chemistry, J.N.T.U.A. College of Engineering, Kalikiri, A.P., India.

Content available at: https://www.ipinnovative.com/open-access-journals

International Journal of Pharmaceutical Chemistry and Analysis

Journal homepage: https://www.ijpca.org/

Original Research Article

Development and validation of stability-indicating RP-HPLC method for the estimation of azoxystrobin in its formulations

G. Rahul[1], N. Venkatasubba Naidu[1,*], V.Venkata lakshmi[2], B. Ramachandra[3]

[1]*Dept. of Chemistry, Sri Venkateswara University, Tirupati, Andhra Pradesh, India*
[2]*Dept. of Chemistry, S G S Arts College, Tirupati, Tirupati, Andhra Pradesh, India*
[3]*Dept. of Chemistry, Annamacharya Institute of Technology & Sciences, Tirupati, Andhra Pradesh, India*

ARTICLE INFO

Article history:
Received 14-02-2022
Accepted 02-03-2022
Available online 09-04-2022

Keywords:
RPHPLC
Azoxystrobin
Forced Degradation
ICH guidelines
Method validation

ABSTRACT

The current work established and validated a simple, selective, precise, and accurate HighPerformance Liquid Chromatographic technique (HPLC) for the analysis of Azoxystrobin in its formulations. The mobile phase is made up of a combination of mobile phases comprising Acetonitrile and water in proportion, 80:20 (v/v). At a run duration of 15 minutes, this was found to yield a sharp peak of Azoxystrobin. Azoxystrobin was analysed using HPLC at a wavelength of 255 nm at a flow rate of 1.0 mL/min. The calibration curve's linear regression analysis results revealed a satisfactory linear connection with a regression coefficient of 0.999 in the concentration range of 50% to 150 %. The linear regression equation was y = 2025x +123.2.The proposed approach was used to analyse Azoxystrobin with a high degree of precision and accuracy.The method was validated for precision, accuracy, specificity, ruggedness and robustness. This method is useful for the quantification of Azoxystrobin because of its precision, accuracy, short retention duration, sensitivity, and mobile phase composition.

1. Introduction

Azoxystrobin is a broad-spectrum fungicide with pyrimidine rings that is used in agriculture to protect crops against fungal infections. It was initially released in 1998 as a new fungicide with a unique biochemical method of action. It is used on grape vines, cereals, potatoes, apples, bananas, citrus, tomatoes, and other crops to prevent spore germination. Rusts, Downey and powdery mildew, rice blast, and apple scab are among the diseases it combats. The Azoxystrobin pesticide is less toxic to humans, other mammals, birds, insects, and earthworms, but it has the ability to penetrate soil and control fungal growth very effectively. The azoles class included the Epoxiconazole chemical. This chemical regulates the metabolism of fungal cells, which in turn regulates fungal growth. The combo product was used to reduce fungus development on crops all over the world. Because the molecules are chemically distinct, their functions are likewise distinct. The action of regulating the fungus in a different way resulted in the control of a wide spectrum of fungus. In the field of plant culture, this combination product has proven to be effective. For a better understanding, the full pesticide molecule must be examined for purity, stability, and other raw material, in-process, and solvent impurities. During the analysis, any analytical methods must be simple, repeatable, and cost-effective.HPLC is a simple and widely used analytical device that is used for qualitative and quantitative analysis efficiently in terms of cost, time, and simplicity. Furthermore, this process is repeatable and may be applied to quality control as well as research and

* *Corresponding author.*
E-mail address: dr.ramachandrarajubandi@gmail.com (N. Venkatasubba Naidu).

https://doi.org/10.18231/j.ijpca.2022.007

The Scientific Temper
Vol. 13, No. 1, January-June, 2022:pp 132-139
ISSN 0976-8653, E-ISSN 2231-6396
A Web of Science Journal
Email: letmepublish@rediffmail.com
Doc ID: https://connectjournals.com/03960.2022.13.1.132

Analytical Method Development and Validation Analysis for Quantitative Assessment of Thifluzamide by HPLC Procedure

B Supraja[1*], B Ramachandra[2] and N Venkatasubba Naidu[3]

Department of Chemistry, S.V.Univeristy, Tirupati, A.P., India.
[2]Depatment of Chemistry, Annamacharya Institute of Technology & Sciences, Tirupati-517520,A.P., India.
Department of Chemistry, S.V.University, Tirupati-517502, A.P., India.
**Corresponding author: suprajabillu91@gmail.com*

ABSTRACT

The precise, systematic, explicit, particular, linear, exact and robust scientific method was developed and validated for the assay of Thifluzamide in THIFLUZAMIDE 24% SC (CILPYROX) fungicide. Presently utilized Thifluzamide as a working standard having limit for assay of Thifluzamide in THIFLUZAMIDE 24% SC (CILPYROX) fungicide are not less than 95.0%. Acetonitrile, water and Phosphoric acid in the ratio (60:40:0.1 v/v/v) used as mobile phase and flow rate 1.0 ml / min. with 10 minutes run time. The detection was carried at 230 nm with column c18 - 250mm x 4.6mm x 5µ and ambient column temperature was maintained. The linearity of this method was found to be linear with a coefficient of regression at 0.999 in the concentration range of 50% to 150%. The linear regression equation was y=2174x-135.8. The present developed HPLC method is detected to be suitable. The analytical solution was detected to be stable up to 48 Hrs at room temperature.

Keywords: Thifluzamide , Robust, Precision, Linearity and Stability.

INTRODUCTION

Thifluzamide acts as inhibiting succinate dehydrogenase in the trycarboxylic acid cycle after being absorbed by the roots and leaves of the plants, which restrain with succinate ubiquinone reductase in the mitochondrial electron transport chain of fungi (Ravichandra, 2018), normally used as a solidfied drench or a foliar spray (Walter et al., 2011), it safeguards potato, strawberry, rice , coffee and maize in opposition to Rizoctonia solani which causes to sheath blight. It regulates rice sheat blight, maize sheath blight, tarspot disease and strawberry sheath blight, and it was invented by Monsanto(Adhikari et al., 1989). Thifluzamide is effective as foliar, soil and seed curative treatment adverse to basidiomycetes fungal pathogens. It is in white colored thick liquid. It could be used as preventive or prior to development of sheath blight disease approximately 45 days after transplanting Noriko T3 and Parizox T2 in paddy rice. It is an aromatic amide obtained by formal condensation of the carboxy group of 2-methyl-4-(trifluoromethyl)thiazole-5-carboxylic acid with the amino group of 2,6-dibromo-4-(trifluoromethoxy)aniline (Golden et al., 1998), furthermore it was tested for the efficacy against rice sheath blight during 2006 and 2009. Among the several test concenrtrations, Thifluzamide 24% SC (CILPIROX) at a proportion of 90 and 105g ai/ha was determined as effective in decreasing the disease intensity and increasing the crop yield. Its solubility in water is 20mg/L and forms emulsion with water. It is used as seed and foliar fungicide on a wide range of crops and a turfgrass with tradename as Greatam. This fungicide found as effective both curative and preventive activity without any symptoms such as phytotoxicity like necrosis, veinclearing, hyponasty, epynasty which involving in rice plants. The extensive utilization of Thifluzamide fungicide then its toxic nature impact on non-target species apart from target organisms in soil, the biomarkers response of earthworms concerning the stress induced by Thifluzamide with different concentrations ranges from 0 to 10mg/kg,

Chemical Data Collections 37 (2022) 100804

Contents lists available at ScienceDirect

Chemical Data Collections

journal homepage: www.elsevier.com/locate/cdc

Data Article

A green, an efficient and viable approach for the synthesis of novel 4*H*-pyran-indolin-2-one derivatives via a one-pot reaction by grinding method

Bolla Lakshmi Prasanna [a], Battula Sreenivasa Rao, PhD [a,*], Palakondu Lavanya [c], Suresh Maddila [a,b,*]

[a] Department of Chemistry, GITAM Institute of Sciences, GITAM University, Visakhapatnam, Andhra Pradesh, India
[b] School of Chemistry & Physics, University of KwaZulu-Natal, Westville Campus, Chiltern Hills, Durban-4000, South Africa
[c] Department of Chemistry, Annamacharya Institute of Technology & Sciences, J.N.T.University, Tirupati- 517 502, Andhra Pradesh, India

ARTICLE INFO

Keywords:
Green chemistry
Grinding
One-pot synthesis
4*H*-pyran-indolin-2-ones
Ecofriendly

ABSTRACT

An highly efficient and green approach for the synthesis of novel 4*H*-pyran-indolin-2-one analogues by the reaction of various isatins with 4*H*-pyran-4-one using $NaHCO_3$ as catalyst under solvent-free, and grinding conditions at room temperature has been showed with good to excellent product yields (89-98%). All the synthesized target compounds has been categorized by various spectroscopic techniques (^{1}H NMR, ^{13}C NMR, HRMS and FT-IR). This novel protocol has several benefit of mild reaction condition, normal grinding, easy available catalyst, economy, environmentl-friendly, short reaction times ($\leq$ 5 minutes), excellent product yields, and absence of any tedious workup.

1. Rationale

Green chemistry deals with techniques and applications which involves the sustainable use of chemicals under clement environmental conditions [1–3]. Awareness of green chemistry has received a significant appraisal as it reduces the adverse effect on the environment caused by the use of toxic chemicals along with enhancing the yield within a short time thereby reducing the dumping cost [4–6]. These techniques are also observed to be advantageous in terms of selectivity and easy separation of the target molecules [7].

Grinding is one of the most frequently used green techniques in the production of compounds [8]. It offers high precision and orderly surface finish using abrasive wheels [9]. The energy requirement for the separation of a unit volume of the ground compounds is relatively high in grinding when compared to other machining techniques [10]. The dexterity of this technique is highly influenced by the grinding wheel material, the dressing of the wheel, the size of the abrasive grains, the rate of mobilisation of the obtained material along with cooling and lubricants used [11]. The grinding kinematics and the cutting depth may lead to ploughing and rubbing which may generate high energy which is liberated in the form the heat [12]. This heat might damage the target material desired, therefore a coolant is used to dissipate the heat generated in this process. The classical synthetic coolants are considered to be toxic to the environment therefore the necessity of eco-friendly coolants lead to the utilization of vegetable oils which serve a dual purpose of cooling and lubricating the wheel [13].

* Corresponding author at: University of KwaZulu-Natal, School of Chemistry, Westville Campus, P. Bag X54001, Durban 4000, South Africa.
E-mail addresses: srbattula@gmail.com (B.S. Rao), sureshmskt@gmail.com (S. Maddila).

https://doi.org/10.1016/j.cdc.2021.100804
Received 15 November 2021; Received in revised form 23 November 2021; Accepted 23 November 2021
Available online 24 November 2021

micromachines

MDPI

Review

Recent Insights and Multifactorial Applications of Carbon Nanotubes

Muthu Thiruvengadam [1], Govindasamy Rajakumar [2], Venkata Swetha [3], Mohammad Azam Ansari [4], Saad Alghamdi [5], Mazen Almehmadi [6], Mustafa Halawi [7], Lakshmanan Kungumadevi [8], Vaishnavi Raja [8], Sulthana Sabura Sarbudeen [8], Saranya Madhavan [9], Maksim Rebezov [10,11], Mohammad Ali Shariati [10,*], Alexandr Sviderskiy [12] and Konstantin Bogonosov [10]

1 Department of Crop Science, College of Sanghuh Life Science, Konkuk University, Seoul 05029, Korea; muthu@konkuk.ac.kr
2 Collaborative Innovation Center for Advanced Organic Chemical Materials Co-Constructed by the Province and Ministry, Ministry of Education Key Laboratory for the Synthesis and Application of Organic Functional Molecules, College of Chemistry and Chemical Engineering, Hubei University, Wuhan 430062, China; microlabsraj@gmail.com
3 Annamacharya Institute of Technology & Sciences, Tirupati 517520, India; swethanadhphysics@gmail.com
4 Department of Epidemic Disease Research, Institute for Research and Medical Consultations (IRMC), Imam Abdulrahman Bin Faisal University, Dammam 31441, Saudi Arabia; maansari@iau.edu.sa
5 Laboratory Medicine Department, Faculty of Applied Medical Sciences, Umm Al-Qura University, Makkah 24382, Saudi Arabia; ssalghamdi@uqu.edu.sa
6 Department of Clinical Laboratory Sciences, College of Applied Medical Sciences, Taif University, P.O. Box 11099, Taif 21944, Saudi Arabia; dr.mazen.ma@gmail.com
7 Medical Laboratory Technology, Applied Medical Sciences College, Jazan University, Jazan 45142, Saudi Arabia; halawim@jazanu.edu.sa
8 Department of Physics, Mother Teresa Women's University, Kodaikanal 624101, India; sivarivudevi@gmail.com (L.K.); vaishnavitr1995@gmail.com (V.R.); cvssarbudeen@gmail.com (S.S.S.)
9 Department of Chemistry, D.K.M. College for Women, Vellore 632001, India; saranyamadhavan07@gmail.com
10 Research Department, K.G. Razumovsky Moscow State University of Technologies and Management (The First Cossack University), 73, Zemlyanoy Val St., 109004 Moscow, Russia; rebezov@yandex.ru (M.R.); katsostud@mail.ru (K.B.)
11 Prokhorov General Physics Institute of the Russian Academy of Science, 38 Vavilova Str., 119991 Moscow, Russia
12 Faculty of Engineering and Technology, Innovative University of Eurasia, 45 Lomov St., Pavlodar 140000, Kazakhstan; kafedrains@ya.ru
* Correspondence: shariatymohammadali@gmail.com

check for updates

Citation: Thiruvengadam, M.; Rajakumar, G.; Swetha, V.; Ansari, M.A.; Alghamdi, S.; Almehmadi, M.; Halawi, M.; Kungumadevi, L.; Raja, V.; Sabura Sarbudeen, S.; et al. Recent Insights and Multifactorial Applications of Carbon Nanotubes. *Micromachines* **2021**, *12*, 1502. https://doi.org/10.3390/mi12121502

Academic Editor: Aiqun Liu

Received: 21 October 2021
Accepted: 28 November 2021
Published: 30 November 2021

Publisher's Note: MDPI stays neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Abstract: Nanotechnology has undergone significant development in recent years, particularly in the fabrication of sensors with a wide range of applications. The backbone of nanotechnology is nanostructures, which are determined on a nanoscale. Nanoparticles are abundant throughout the universe and are thought to be essential building components in the process of planet creation. Nanotechnology is generally concerned with structures that are between 1 and 100 nm in at least one dimension and involves the production of materials or electronics that are that small. Carbon nanotubes (CNTs) are carbon-based nanomaterials that have the structure of tubes. Carbon nanotubes are often referred to as the kings of nanomaterials. The diameter of carbon is determined in nanometers. They are formed from graphite sheets and are available in a variety of colors. Carbon nanotubes have a number of characteristics, including high flexibility, good thermal conductivity, low density, and chemical stability. Carbon nanotubes have played an important part in nanotechnology, semiconductors, optical and other branches of materials engineering owing to their remarkable features. Several of the applications addressed in this review have already been developed and used to benefit people worldwide. CNTs have been discussed in several domains, including industry, construction, adsorption, sensors, silicon chips, water purifiers, and biomedical uses, to show many treatments such as injecting CNTs into kidney cancers in rats, drug delivery, and directing a near-infrared laser at the cancers. With the orderly development of research in this field, additional therapeutic modalities will be identified, mainly for dispersion and densification techniques and targeted drug delivery systems for managing and curing posterior cortical atrophy. This review

IMBIBING GLASS CEILING CULTURE IN GIRL CHILD

Dr. D. Bharathy
Assoc. Prof. of English
AITS
Tirupati

Dr. P. Krishnaveni
Assoc. Prof. of English
AITS
Tirupati

Abstract:

In many parts of the world, the birth of a girl child is not welcomed. She is neglected because of her gender. Right from her arrival, she faces a lot of discrimination, humiliation, and oppression at every stage of life. Some manage to survive and foster new paths to follow. Most, however, surrender hopelessly to the sad fate assigned to them.

In a country rife with gender inequalities and an underlying nature of patriarchy, girl children often find themselves at the short end of the stick. Discrimination against girls is rampant and due to the fear of abuse and exploitation, they are kept at home and not sent to school. Child marriage is yet another glaring issue due to which girls are forced to give up going to school at an early age.

The phrase "glass ceiling" is used to describe the difficulties faced by women when trying to move to higher roles in a male-dominated hierarchy. It is a metaphor referring to an invisible barrier that prevents women as being. This paper is an insight into the concept of the glass ceiling imbibing in girl child from family to society and how women design "Glass ceiling" to the fellow woman.

Keywords:

Glass Ceiling, Imbibing, Invisible, Discrimination, Male Domination.

Introduction:

"*It is impossible to think about the welfare of the world unless the condition of women is improved. It is impossible for a bird to fly on only one wing*."

— Swami Vivekananda.

The 'Woman' is a beautiful creation by the God. She is made up from the blood and rib bones of the man. Though the omniscient has created both the sex to live in harmony, in this process, Nayar in his book *Widowhood in Modern India* reveals, "a man needs a woman just as a master needs a slave" (Nayar 126). Despite raising the voices against the suppression and exploitation through the works by many feminists,

Frontiers in Heat and Mass Transfer (FHMT), 17, 23 (2021)
DOI: 10.5098/hmt.17.23

Global Digital Central
ISSN: 2151-8629

Frontiers in Heat and Mass Transfer

Available at www.ThermalFluidsCentral.org

THERMOPHORESIS AND BUOYANCY EFFECTS ON CHEMICALLY REACTIVE UPPER CONVECTED MAXWELL FLUID FLOW INDUCED BY AN EXPONENTIALLY STRETCHING SHEET: APPLICATION OF CATTANEO-CHRISTOV HEAT FLUX

N.Vijaya[a,*], P. Krishna Jyothi [b], A. Anupama[c] , R. Leelavathi[d], K. Ambica[e] ,

[a] *Department of Mathematics, Koneru Lakshmaiah Education Foundation, Vaddeswaram, Guntur, AP, India-522502*
[b]*Department Mathematics, Annamacharya Institute of Technology and Sciences, Tirupati, AP, India -517520*
[c]*Department of Mathematics, DVR &Dr. HS MIC College of Technology, Kanchikacherla, Krishna, AP, India-521180*
[d]*Department of Mathematics, Andhra Loyola Institute of Engineering and Technology, Vijayawada, AP, India-520008*
[e]*Department of Mathematics, CMR Engineering College, Kandlakoya(v), Hyderabad, Telangana, India-501401*

ABSTRACT

The main intention of this study is to explore Maxwell fluid under the influence of thermophoresis and buoyancy forces induced by exponentially stretching sheet under chemical reaction. Cattaneo –Christov heat flux model is used to explore heat and mass characteristics with variable magnetic field, and chemical reaction. Variables of similarity were induced to transmute partial differential equations into dimensionless equations and are resolved numerically by elegant method bvp 4c. Behavior of various critical parameters on velocity, temperature and concentrations is graphically presented and discussed. Non Newtonian nature of the Maxwell fluid is clearly explored by the Maxwell parameter, it was found that for higher values of Maxwell parameter velocity profiles decreases. Thermal and solutal buoyancy forces acts in favor to velocity and thermophorotic parameter acts against concentration. Impact of Skin friction, Sherwood and Nusselt numbers on the flow configurations for diverse critical parameters are exposed realistically via graphs. Arithmetical results that obtained in the current exploration are confirmed with previously explored values in very marginal way.

Key words: *Maxwell fluid, Cattaneo Christov heat flux model, Buoyancy forces, Upper Convection*

1. INTRODUCTION

MHD flow intensifies the curiosity of many researchers in modern era for the reason that it plays immense role in numerous applications in all fields of science and technology like plasma physics, aerodynamics, astrophysics and super conduction coils, polyethylene industries, coatings, biomedical applications, drug transportations and so forth. Numerous classical theories and transport models of heat and mass transfer are available in the literature. In these models both thermal and concentration relaxation features were involved. Fourier (1822) and Fick (1855) described the phenomenon of heat and mass transfer. The main inadequacy of the Fourier's law known as "Paradox of heat conduction" is that it leads the energy equation to a parabolic equation. To overcome this paradox, several modified versions of the Fourier's law have been introduced. Cattaneo (1948) in his experiment included heat flux relaxation time required to establish steady conduction once a temperature gradient is imposed. Later Christov (2009) proposed a modification to the time derivative in the Maxwell-Cattaneo model with the Oldroyd upper-convected derivative preserving material invariant formulation. Hayat et al. (2016) studied three -dimensional flow of nanofluid with Cattaneo–Christov double diffusion under Brownian motion and thermophoresis effects. Sui *et al*. (2016) in their paper reported that higher values of slip parameter decelerates velocity and skin friction. Awais *et al*. (2018) analyzed that heat transfer rate decays for advanced relaxation time whereas it increases for higher Prandtl number.

The viscosity of the fluids like paints, greases, lubricant oils coal tar, jellies, and paste varies depending upon the influences like shear in fluid, pressure and temperature. These fluids are non-Newtonian in nature. In view of various rheological properties of non-Newtonian fluids several constitutive relationships between stress and rate of shear are examined. Fluids of non-Newtonian types are mainly distributed among integral, rate and differential types. Maxwell fluid falls under rate type non-viscous fluids category. This class illustrates the relaxation time effects. Fetecau (2003) obtained exact solution for Maxwell fluid flow. Umer Farooq *et al* .(2019) considered Buongiorno model to explore properties of Maxwell fluid with nanomaterial over stretching surface. Wubshet Ibrahim *et al*. (2020) scrutinized upper convected slip effects of stagnation point flow of

*Corresponding author, Email: vijayanalleboyina@kluniversity.in

Publisher: Taylor & Francis & Informa UK Limited, trading as Taylor & Francis Group

Journal: *International Journal of Ambient Energy*

DOI: 10.1080/01430750.2021.1923569

Influence of chemical reaction on MHD couple stress nanoliquid flow over a bidirectional stretched sheet

P. V. Satya Narayana[1*], Nainaru Tarakaramu[2], D. Harish Babu[3]

[1*]Dept. of Mathematics, SAS, Vellore Institute of Technology, Vellore-632014, T.N, India
[2]Dept. of Mathematics, Annamacharya Inst. Tech. & Sci., Tirupati-517520, A.P, India
[3]Dept. of Mathematics, Sree Vidyanikethan Engineering College, Tirupati-517102, A.P, India

[*]Corresponding Author mail Id: pvsatya8@yahoo.co.in

Abstract

A mathematical model has been established to study the effect of heat source on magnetohydrodynamic 3D chemically reacting couple stress nanofluid flow generated due to the stretching surface. The flow of the fluid in this analysis is controlled by the effects of Brownian motion and thermophoresis force on the temperature and concentration boundary. Zero nanoparticle mass flux condition is employed at the surface, which specifies that the nanoparticles fraction are submissively measured. The systems of partial differential equations translated into dimensionless expressions by using suitable similarity functions and are then evaluated computationally (by utilizing MATLAB). The influence of different physical parameters on the flow variables is displayed graphically and discussed. It is reviled that the thermal and species boundary layer thickness of the liquid is enhanced due to the rising values of thermal radiation ($2 \le R_d \le 8$) and heat generation ($0.1 \le H \le 0.4$). On the other hand rate of heat transfer and skin-friction coefficient are shown reverse trend with the increase of couple stress values ($0.1 \le K \le 0.4$). The outcomes of present work are matched with the results available in the literature and are found to approve very closely as a limiting case.

Keywords: MHD, Chemical reaction, Heat source, Couple stress, nonlinear Thermal radiation.

1. Introduction

The simple overview of the standard theory of Newtonian fluids is the Couple stress fluid theory (Stokes 1966, Stokes 1984) with body couples and couple stresses (due to micro-rotation of freely suspended particles, Examples: polymer-thickened oils, lubricants containing a small amount of polymer additive, blood, Liquid crystals). Couple stress fluid has gained considerable attention in assessment of its numerous manufacturing and technical claims (centrifugal filtration processes,

Applied Physics A (2021) 127:979
https://doi.org/10.1007/s00339-021-05136-x

Applied Physics A
Materials Science & Processing

Influence of oxygen partial pressure on the structural, optical and electrical properties of magnetron sputtered $Zr_{0.7}Nb_{0.3}O_2$ films

B. Gopal Naik[1] · **S. V. Jagadeesh Chandra**[2] · **S. Uthanna**[1]

Received: 24 September 2021 / Accepted: 23 November 2021 / Published online: 2 December 2021

Abstract

Thin films of zirconium niobium oxide ($Zr_{0.7}Nb_{0.3}O_2$) were deposited by DC reactive magnetron sputtering method on unheated quartz and p-silicon substrates at different oxygen partial pressures. XPS studies confirmed the presence of zirconium, niobium and oxygen associated with $Zr_{0.7}Nb_{0.3}O_2$ by showing the respective core-level binding energy values. The films formed at oxygen partial pressure of 4×10^{-4} Torr were of single-phase $Zr_{0.7}Nb_{0.3}O_2$ with amorphous nature. Optical band gap of the films increased from 4.19 to 4.42 eV with an increase in oxygen partial pressure from 8×10^{-5} to 4×10^{-4} Torr. The $Zr_{0.7}Nb_{0.3}O_2$ films formed at 4×10^{-4} Torr were also annealed in air at different temperatures in the range from 500 to 750 °C. The films annealed at temperature 600 °C showed a weak diffraction peak of tetragonal Nb_2O_5 with amorphous background. Further increase in temperature to 750 °C, the films transformed to polycrystalline with tetragonal structure. Shift in the diffraction angles revealed that niobium substituted the zirconium and form $Zr_{0.7}Nb_{0.3}O_2$. The band gap of the films increased from 4.64 to 4.81 eV with the increase in annealing temperature from 600 to 750 °C. Metal–oxide–semiconductor (MOS) gate capacitors with configuration Al/$Zr_{0.7}Nb_{0.3}O_2$/p-Si were deposited and studied the capacitance–voltage and current–voltage characteristics. The dielectric constant of the films increased from 15 to 23 with increase in annealing temperature from 600 to 750 °C. The leakage current density of the as-deposited MOS capacitors was 2×10^{-5} A/cm^2 and decreased to 4×10^{-7} A/cm^2 with the increase in annealing temperature to 750 °C due to improvement in the crystallinity and decrease in defect density in the films.

Keywords Zirconium oxide · Niobium oxide · Gate oxide · MOS capacitor · Sputtering

1 Introduction

Drastic scaling down of the components is the driving force for investigation of high-speed, low-power and low-cost CMOS devices, and it demands for new-generation mixed high-k dielectrics. In this contest, zirconium oxide (ZrO_2) is a potential metal oxide that has been investigated widely to replace the conventional gate insulator, silicon oxide (SiO_2) in metal–oxide–semiconductor (MOS) devices because of its high dielectric constant wide band gap with acceptable conduction band offset value [1]. In recent years, there was much attention on enhancing the dielectric properties and eventually the thermal stability of ZrO_2 with Si by adding pentavalent ions. In particular, Piva et al., investigated the effect of addition of Ta, Mo, W and Nb to ZrO_2 to avoid lower-temperature crystallization effects [2]. The chemical and structural similarities of niobium- and zirconium-based oxide triggers the idea of mixing them to enhance the dielectric properties of resulting oxide materials. Structure, dielectric and optical properties of amorphous and crystalline Ta_2O_5 and Nb_2O_5 films have already been reported in the literature [3, 4]. The tendency in the formation of disordered stacking faults or twin boundaries might be attributed to the variation in the oxygen concentration has been reported [5]. It indicated that the Nb-doped zirconium oxide exhibit significantly higher electrical conductivity than that of ZrO_2 [6]. Hydrogenated zirconium oxide films are potential for application in solid-state ionic energy system [7]. Doping of aluminium in zirconium oxide films leads to tailor the

✉ S. V. Jagadeesh Chandra
svjchandra@gmail.com

✉ S. Uthanna
uthanna.suda@gmail.com

[1] Department of Physics, Sri Venkateswara University, Tirupati 517 502, India

[2] Department of Physics, Institute of Science, GITAM (Deemed To Be University), Visakhapatnam 530 045, India