Applied Operations Research (Anna Univ)

ISBN Number :

978-93-5299-017-7

Student Price :

Rs.210

Add to cart

Student Dollar Price :

8$

Book Edition :

First

Year of Publication :

2018

Deep Learning and Parallel Computing Environment for Bioengineering Systems

EDITED BY
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AP

Elsevier
3251 Riverport Lane
St. Louis, Missouri 63043

ISBN: 978-0-12-816718-2

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Deep Learning and Parallel Computing Environment for Bioengineering Systems
2019, Pages 139-151

Chapter 8 - Deep Learning and Semi-Supervised and Transfer Learning Algorithms for Medical Imaging

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https://doi.org/10.1016/B978-0-12-816718-2.00015-4

Abstract

Deep learning is beyond what we think. The deep learning techniques involve selecting and extracting the features, and also this can give new structures. Coming to the medical field, it just doesn't identify any ailment, but also gives conceivable prophecy models to help out the doctor. This is the future. Not just in medical imaging, but in healthcare overall. Artificial intelligence is not meant to make the job easier, but to make it precise and particular, protected and, most prominently, human free. This encroachment can provide evidence to be one of the most beneficial things in the history of humankind. In this chapter, there is absolute stipulation of primary acquaintance and "state-of-the-art" approaches with value to deep learning in the field of medical imaging. Deep learning and machine learning have had a profound impact on the medical field. They made the job even faster, and far more perfect than any human brain. People are agreeable to spend as much money as needed for healthcare, but at the same time look forward to the best and most contented treatment.

Previous Next

Keywords

Deep learning; Machine learning; Artificial intelligence; Medical images

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Experimental Study on Concrete Based on Magnesium Phosphate Cement

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ABSTRACT
Magnesium phosphate cement is rapid setting early strength gain cement. The magnesium phosphate cement is the phosphate boned inorganic material derived from reaction between phosphate and magnesium oxide. The setting time and mechanical properties is depended upon the proportion and characteristic of raw material and water to binder ratio. In this study, OPC was replaced by 5%, 10%, 15% and 20% magnesium phosphate cement. The mix design of concrete was carried out for M30 grade. The mechanical properties such as compressive, flexural, and tensile strength was assessed for all the mixes. The strength test results reveals that the optimum amount of magnesium phosphate cement is 15%.

1. INTRODUCTION

Magnesium phosphate cements is an advanced cementing material, given very high strength mortar. This cement can be used for rapid repair of damaged concrete roads and airfield pavements. This is important development for emergency repair of airfields, launching pads, hard standing and road pavements suffering damage due to enemy bombing and missile attack. The MPC has been found to possess unique hydraulic properties, in particular, a controlled rapid set and early strength development. MPC is a prepacked mixture of dead burnt magnetite with fine aggregate mixed with phosphate. It sets rapidly and yields durable high strength cement mortar. This new cement has a bright future as an alternative to costly synthetic resins currently in use for emergency repair of concrete pavements[(1-3)]. Furthermore, some additive materials are added to reduce the cost of magnesium phosphate cement for repairing works. It has been suggested to includefly ash to enhance the durability and obtain a new in lithium magnesium slag magnesium phosphate cement quick repair material[(4-5)]. Lu, Xuan and Chen, Bing (2016) has reported that addition of MK improved the strengths greatly at the early age, and the compressive strength at 1 h can reach 65.7 MPa[(6)]. It has been promoted to use magnesium phosphate cement as repairing material. However, the present work has attempted to replace OPC by magnesium phosphate cement to find their behaviour in concrete.

2. MATERIALS AND METHODS

2.1 Cement

Ordinary Portland Cement (OPC) 53 Grade conforming to IS: 12269-1987 was used in the present work. The physical and chemical characteristics of cement weremeasured using the procedure prescribed by IS: 4031-1988 and IS: 12269-1987 respectively. The physical characteristics are furnished in Table 3.1 and 3.2 respectively. The properties of cement were measured using the procedure prescribed by IS: 4031-1988and the results is presented in Table2.1

Table 2.1 Physical Properties of OPC

S. No	Description	Test Results	Relevant IS Code
1	Specific gravity of cement	3.15	-
2	Fineness of cement	1.17	IS 12269-1987
3	Standard consistency of cement	30%	IS 12269-1987
4	Setting time Initial setting time Final setting time	 33 min 310 min	IS 12269-1987
5	Soundness of cement	2.2 mm	IS 2269-1987
6.	Compressive strength: 7 days 28 days	 39 54	 37 MPa 53 MPa

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Mechanical Properties of Normal and High strength Concrete Made with Types of Coarse Aggregates

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ABSTRACT

As an important component of concrete, aggregate has significantly influence on normal and high strength concrete. In this paper, the effect of aggregate types on the strength properties of normal and high strength concrete with target compressive strength of 20,40,60 MPa were investigated. Concrete specimens were prepared with four different types of aggregates, namely limestone, pink granite, grey granite and anorthosite. Tests conducted include compressive strength, split tensile strength and flexural strength. The test result reveals that strength of grey granite was higher than other types of aggregate studied. This work suggested that normal and high performance concrete can be made by evaluating sources of aggregate and it could be used for the preferable grade of concrete.

KEYWORDS: Aggregate types, normal strength concrete, high strength concrete

1. INTRODUCTION

In concrete structures, coarse aggregate play an important role in strength parameter. Aggregate are essential in making concrete into an engineering material. They give concrete its necessary property of volumetric stability. Aggregates exhibit an important influence on concrete by providing rigidity to the material that is necessary for engineering use. Significant improvements in the workability of the fresh concrete are contributed by proper choice of aggregates and that aggregate influences highly important properties of the hardened concrete as well, volume stability, unit weight, resistance to destructive environments, strength, thermal properties etc.(1-3). Aggregate properties have profound influences which need to be realized and acknowledged.

The effect of using crushed quartzite, crushed granite, limestone, and marbles coarse aggregate on the on the mechanical properties of high-performance concrete. The study revealed that the strength, stiffness, and fracture energy of concrete for a given water/cement ratio depend on the type of aggregate (4). Meanwhile, effect of three types of coarse aggregate, quartzite, granite, and river gravel on the compressive strength of concrete were studied. The outcome of the study indicated that highest compressive strength at all ages was noted with concrete made from quartzite aggregate followed by river gravel and then granite aggregate (5). Besides, an attempt was made to use basalt, limestone and gravel as coarse aggregate to produce normal and high-performance concrete. The research work demonstrated that for high performance concrete at 28 days, basalt produced the highest strength, whereas gravel gave the lowest compressive strength. Normal strength concrete made with basalt and gravel gave similar compressive strength while the concrete containing limestone attained higher strength (6). Further, the effects of quantity and particle size distribution of coarse aggregate on the compressive strength of concrete were examined. Three types of coarse aggregates were mixed in four different proportions for concrete production. The result exhibits that for strength varied depending upon the sources of the aggregates, especially high strength concrete can be made by evaluating new sources of aggregate with beneficial strength and stiffness (7). In the study of using low quality aggregates calcareous, dolomitic and quartzitic limestone and steel slag in concrete revealed that strength of steel-slag aggregate concrete was more than that of crushed lime stone aggregate. Whereas lowest strength was noted with calcareous limestone aggregate concrete. Three modes of failures were identified within the paste matrix, at the paste-aggregate interface and within the aggregate. Moreover, the quality of aggregate significantly influences the mode of failure of concrete under compression (8-10). The effect of size of coarse aggregate affects the compressive strength of concrete. In high strength concrete 10 mm and 5 mm size of aggregate gives higher compressive strength of other type concrete (11). The strength of concrete may be reduced when the size of coarse aggregate exceed 15 mm due to the weak interfacial zone between the aggregate and the cement paste (12). Furthermore, basalt, sandstone, Eocene and Devonian crushed limestone as coarse aggregates were used to understand the mechanical behavior of both normal- and high-strength concrete. The compressive strengths of Devonian limestone and basalt concretes were the highest compressive strength of concrete. This may be due to higher compressive strength of rock which contributes higher compressive strength of concrete especially for high strength concrete (13). However, use of locally

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Experimental Investigation on Raw and Thermally Treated Clay Based Geopolymer Concrete

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ABSTRACT

In the emerging technological world, the conventional materials and methods are changing every day and approaching the goal of achieving highest utility and benefits to the human community. Keeping this in mind, geopolymer concrete was first produced in the early part of 1970s with metakaolin and later with fly ash. This material undergoes polymerization with aluminosilicates materials in the presence of highly alkaline solution and hardens by thermal curing. In this paper an attempt is made to utilize clay in the form of raw clay and calcined clay as aluminosilicate materials with alkaline solution (Sodium silicate + Sodium hydroxide).This research work is comprising of all important mechanical strength tests, physical and chemical properties, Diffusion characteristics of chloride and modern corrosion testing such as impressed voltage tests and Tafel slope extrapolation techniques to understand clearly the behavior of geopolymer with respect to corrosion of steel when embedded in clay based geopolymer. All the test data are presented neatly and discussed in details.

1. INTRODUCTION

Clays of different kinds potentially and abundantly available on earth crust. These clays are not properly utilized by the civil engineering community because of the reason that the present civil engineers do not have proper understanding of material. This lack of understanding caused a gap in developing modern construction materials. By X ray fluorescence analysis it is understood that there is no much difference between a raw clay and the fly ash in oxide composition. However the presence of few organic materials in raw clay has some harmful effect when used with both in Ordinary Portland Cement (OPC) and geopolymer. This effect is more pronounced in OPC concrete rather than in geopolymer. Therefore the thermal treatment of clay at high temperature will certainly eliminate the organic material, in addition to modifying these silicate particles.

In this research work raw and treated clays from various places were used for preparation of geopolymer concretes, in addition to geopolymer made with fly ash .From this study it is found that clays either raw or thermally treated helped enormously for the formation of geopolymer concrete which provided very high strength compared to geopolymer made with fly ash and ordinary cement concrete. Irrespective of the place of collection and type of clays, the clay based geopolymers found to perform extra-ordinary better than OPC concrete as well as geopolymer based on fly ash, in mechanical strengths, corrosion tests and other durability test. This indicates improved microstructure and formation of crystals in the pores, voids and fissures. This helps greatly to reduce the diffusion characteristics of chlorides and thereby the durability is increased against corrosion.

Making geo polymer concrete with clay presents may advantages compared to concrete mate with ordinary Portland cement (OPC). Geo polymer possess fast setting and hardening, excellent bond strengths, long term durability and better fire and acid resistance[2,3]. And therefore it has many industrial applications also [4]. Apart from these, the geo polymer concretes are produced by low energy consumption and low emission of Co_2 [5, 6] which certainly makes the product as a 'Green Materials' [7, 8]. Variety of alumino silicate minerals are examined by many researchers to establish such alumino silicate materials as potential material for producing geo polymer [3] .It has been established that calcined minerals provide a potential source for making geopolymer [9] it has ever proved that the calcined clay provides best results due to change of phase from crystalline to amorphous [10] proof of record for Indian clays are missing. The activator alkaline solution is sodium silicate with sodium hydroxide solution. Composition variation of this alkaline solution usually general setting and hardening process of geopolymer. higher content of sodium silicate and sodium hydroxide provide the higher mechanical strength.[1] it is also found that very high p^H or alkalinity of the solution affect the geo polymer properties adversely [13]. It has been suggested [14] that the molar ratio of (Na_2O / Al_2O_3) must be unity. Presence of Na_2O, Al_2O_3 and SiO_2 plays a major role for the transformation of phases from crystalline to amorphous [15]. Increase in Fe_2O_3 in clay cause darkness of the raw clay. Higher content of Fe_2O_3 will be dark grey and low Fe_2O_3 will present lighter or white clay. Therefore , in this research work, raw clay as obtained from the natural sources are treated in muffle furnace to heat it to 900°c for one hour used for

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" ,
K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Experimental Investigation on Bagasse Ash and GGBS in Geopolymer Concrete

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Abstract:

Concrete is most widely and extensively used construction material in all over the world. Around the world, there are lot of researches going on about effective utilisation of waste materials to save environment from pollutions like Carbon dioxide emission and Global Warming which caused also by cementitious materials. Disposal of waste material is difficult in every fields and its effective use is emerging one. It is understood that geopolymer cement is better than Ordinary Portland Cement. Also, it can effectively reduce CO_2 emission. In the present study, the effective use of Sugarcane Bagasse Ash and Ground Granulated Blast Furnace Slag in geopolymer mortar mix was studied and these materials are naturally occurring industrial wastes and by-products that are less energy intensive. They are also called as pozzalonas materials which are combined with silica and alumina content that exhibits cementitious properties. Trial mixes were made to find potential mix in Sugarcane Bagasse ash-Ground Granulated Blast Furnace Slag in geopolymer mortar. The obtained results indicate that the optimum mix proportion for geopolymer mortar prepared with this binder was found at 10M, 12M, 14M NaOH with 75% and 100% Ground Granulated Blast Furnace Slag as binder content in the mix was conducted under ambient curing temperature condition.

Keywords: GGBS, Sugarcane Bagasse Ash, Molarity concentration, NaOH, Sodium Silicate, Geopolymer Mortar.

1. INTRODUCTION

Concrete is probably the most extensively used construction material in the world and due to these the environment sustainability is at the stake in both terms of damage and CO_2 emission during cement manufacture. According to B.V. Rangan [1], that the cement production will increase from about 1.5 billion tons in 1995 to 2.2 billion tons in 2010. If the waste material ashes are reused instead of disposal, there will be a great reduction in the environmental pollution [2]. Several efforts are made to reduce the utilisation of Portland cement in concrete in order to address the global warming problems. For overcome these above challenges geopolymer concrete technology which is said to be a most fastest developing field of research in function were introduced. This involves the usage of supplementary cementing materials like fly ash, silica fume, ground granulated blast furnace slag, rice husk ash and metakaolin as an alternative binder to Portland cement.

Subsequently, the geopolymer technology proposed by Davidovits (1998) shows considerable promise for application in concrete industry as an alternative binder to the Portland cement (Duxson et al, 2007). In terms of global warming, the geopolymer technology could significantly reduce the CO_2 emission to the atmosphere caused by the cement industries as shown by the detailed analyses of Gartner (2004). Geopolymers are inorganic by-product materials, which are rich in silicon (Si) and aluminium (Al) and these polymerisation Monomers and other silicon and aluminium hydroxide condense to form rigid chain reaction with the application of mild temperature and forms of nets of oxygen bond under ambient room temperature. The source binders are either natural or by-product material. Which can be chosen based on its availability, material cost, application. Alkaline liquids are either sodium or potassium based. According to Rashidah Mohamed Hamidi [3], that the concentration and effect of alkaline solutions are tested for maintaining geopolymerisation in concrete. The
geopolymerisation process involves the usage of alkaline liquid is in the combination of sodium hydroxide (NaOH) or potassium hydroxide (KOH) with sodium silicate or potassium silicate.

Due to the strong chemical base reaction with high amount of sodium hydroxide & Sodium Silicate, the temperature of freshly prepared mix is also high [4]. Several waste materials that have been investigated in the production of alkali- activated binders. In some developing countries, it could be interesting to combine selected ashes such as blast furnace slag or fly ash from industrial wastes as typical precursors. According to Pradip Nath [5], the variation of the amount of alkaline activator affects the compressive strength of mix. This investigation mainly based on utilization of Bagasse ash (SBA) and Ground granulated blast furnance slag (GGBS) in geopolymer concrete. In such way, sugarcane bagasse ash is one of these options and are recently accepted as a Pozzolanic material which is obtained as a by-product of the sugarcane industries. Its application will depend on the combustion conditions of sugarcane bagasse, it means, on the physical and chemical properties of SBA. Comparing to OPC binders, alkali-activated materials present greater resistance to acidic attack due to higher alkalinity of the pore and lower CaO/SiO_2 ratio in the alkali-activated systems. However bagasse ash in geopolymer is not focussed so far. Consequently, in this present study, an attempt has been made to study the feasibility of using bagasse ash and GGBS as the source binder in geopolymer mortar.

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Fly Ash Based Geopolymer Mortar Made With Sea Water

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ABSTRACT
The present study describes the study made on fly ash based geopolymer mortar made with sea water. The combination of sodium silicate solution and sodium hydroxide solution was chosen as alkaline liquid. The molarities of NaOH were taken as 8M, 10M, 12M and 14M. The specimens were heat-cured at 60°C for 24 hours. From the results, it was found that fly ash based mortar mixed with sea water enhances the strength than it was prepared with potable water.

KEYWORDS— Geopolymer, fly ash, alkaline liquid, heat-curing, sea water

1. INTRODUCTION

Concrete is one of the most widely used construction materials. The demand of concrete is increasing day by day to satisfy the need of development of infrastructure facilities. The production of Portland cement not only consumes the significant amount of natural resources but also liberates a large amount of carbon dioxide and other greenhouse gases. It is estimated that one ton of CO_2 is released into the atmosphere for every ton of OPC produced. [1].

Joseph Davidovits has attempted to eliminate the use of Portland cement with the new advent of geopolymer technology for the binder in concrete. Geopolymer binder is one of such alternative binder to cement which is synthesized by mixing aluminosilicate material and high alkali solutions. Geopolymers are made from source materials with silicon (Si) and aluminium (Al) content and thus cement can be completely replaced by marginal materials like fly ash. It is an innovative material and suitable alternative to conventional Portland cement for use in transportation infrastructure, construction and offshore applications [2].

The performance against acid resistance was good when using fly ash and GGBS in GPC A study on fly ash based geopolymer concrete with potassium based alkaline activators indicated that the compressive strength was increased with the increase in the molarity of NaOH [3]. With the increase of alkaline liquid to fly ash ratio strength decreases and alkaline liquid to fly ash ratio less than 0.3 was very stiff [4]. The strength of oven cured geopolymer concrete stated that longer curing time improved the polymerization process resulting in higher compressive strength of geopolymer concrete [5]. Split tensile strength of geopolymer concrete increased as percentage of steel fibre increased and curing under normal sunlight yielded strength of 16 N/mm^2 [6]. Heat cured fly ash based geopolymer concrete has an excellent resistance to sulphate attack, salt attack and acid attack as compared to ambient curing [7-8].

Abd Allah et al (2017) has reported that sea water can be used as mixing water in the GGBS and metakaolin combination source material geopolymer concrete [9]. In this context, the present study has made an attempt to carry out experimental work on fly ash based geopolymer mortar made with sea water

2. EXPERIMENTAL INVESTIGATION

2.1. Materials

The following materials were used to produce fly ash based geopolymer mortar with sea water.
Low calcium class F type fly ash specific gravity 2.21
Sodium hydroxide (98% purity in pure form)
Sodium silicate solutions (8M, 10M, 12M and 14M)
Fine aggregate (fineness modulus 2.61)

2.2. Mix Proportion

The ratio of fly ash to sand was selected as 1:3. In the present study on fly ash based geopolymer mortar, the alkaline liquid to binder ratio was selected as 0.35, 0.4 and 0.45. The molarity of the sodium hydroxide solution was kept as 8M, 10M, 12M and 14M. In addition, the ratio of Na_2SiO_3/NaOH was considered as 1.5. The alkaline liquid to binder ratio was selected as 0.35. The molarity of the sodium hydroxide solution was ranged from 8M to

Mechanical Properties on Self Compacting Geopolymer Concrete By Replacement of GGBS And Bottom Ash

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ABSTRACT: Self-compacting Geopolymer concrete represent one of the most outstanding advances in concrete technology. Self compacting concrete is a flowing concrete mixture that is able to consolidate under its own weight. The highly fluid nature of SCC make it's suitable for placing in difficult situation and in section with congested reinforcement. The paper studies are carried out of self compacting concrete in which cement is replaced by Ground Granulated Blast Furnace Slag and Bottom Ash in various proportions. The proportion of GGBS:BA in which cement is replaced as 100:0, 75:25, 50:50, 25:75, 0:100. The workability properties such as filling ability, passing ability and resistance to segregation were assessed using slump flow, T-50 slump flow, V funnel ability according to EFNARC were satisfied. Super plasticizer MASTER SKY GLENIUM B233 is used to maintain workability with constant water binder ratio. The result concludes, compressive strength of concrete increase at the percentage G100:B0, G75; B25 at 64.8 MPa, 52.6 MPa give higher strength both passing and filling ability were achieved.

Keywords: Self Compacting Geopolymer Concrete, Bottom Ash, Ground Granulated Blast furnace Slag, Sodium Hydroxide, Sodium Silicate, Super plasticizer Master sky GLENIUM 8233.

1.INTRODUCTION:

Concrete is the world's most versatile, durable and reliable construction material. Large quantities of Portland cement are required for concrete. The consumption of Ordinary Portland Cement causes pollution to the environment due to the emission of CO_2. Self- compacting concrete is required to flow and fill special forms under its own weight, it shall be flowable enough to pass through highly reinforced areas, and must be able to avoid aggregate segregation. Based on the literature reviews were kasi reddy mallikarjuna reddy [1] ash based SCGC replaced with 0 to 100% of GGBS. The specimen was cured both oven and ambient curing. Hence the result shows that adding the GGBS to fly ash based SCGC, the strength properties are increased. Ambient temperature curing for 28days specimen has high strength compared to oven cured specimen at 70℃ for 7days.T.H.Patel [2] fly ash is replaced with 10-50% by cement and GGBS also replaced with 10-50% by cement. Hence the result 10% of fly ash gives better result and 30% of GGBS higher strength and increase workability. E.Sreenivasulu [3] these paper study the replacement of F_{10} G_0, $F_{10}G_5$, $F_{10}G_{10}$.Mechanical property of compressive strength at 28days $F_{10}G_{10}$ increase the strength and maintain the flowing ability, filling ability.

2. MATERIAL USED:

i) Ground Granulated Blast Furnace Slag:

GGBS has essential silicates and alumino silicates of calcium. GGBS is obtained from JSW Cement Company. The specific gravity of GGBS IS 2.7 and light grey was used.

ii) Bottom Ash:

BA was collected from Mettur thermal power plant, Salem. As it was coarse when obtained, it was ground to a practice size of less than 45micron to increase its surface area as well as reactivity. The specific gravity of BA was 2.50 respectively.

iii) Fine Aggregate:

Locally available M sand was used as fine aggregate in this work. The fine aggregate in geopolymer concrete plays a major role in workability and stability of the mix proportion. The M sand passing through 4.75mm and retained on 300microns were used to achieve minimum void ratio and the physical properties like specific gravity, water absorption, fineness modulus are given below

Table1: Test Result on Fine Aggregate

S.NO	DESCRIPTION	TEST RESULT	RELEVANT IS CODE PRACTICES
1	Specific Gravity	2.77	IS2386(Part I)-1963
2	Fineness Modulus	3.74 (Zone-II)	IS2386(Part I)-1963
3	Water Absorption	0.8%	IS2386(Part III)-1963

Study on Strength Properties of Concrete with Partial Replacement of Basalt Powder as Cement Replacement Material

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ABSTRACT
Concrete is most widely used man made construction material in civil engineering applications. Among the total co2 content in the world 7% of it generated by the cement industry. Every ton of cement production releases nearly one ton of CO2 to atmosphere. Then the production of cement polluted the environment, thought it has abutment benefits. The pollution effect on environment can be minimized by increasing the usage of basalt powder in our construction industry. Present study has been undertaken to study the effect of basalt powder on cement concrete on the basis of compressive, split tensile, flexural strength and thereby reduce the environmental problem by proper utilization. In this phase, concrete of M30 grade is considered experiments conducted on concrete cubes with and without addition of basalt powder as 0%, 5%, 10% and 15% by weight of cement in concrete. The results suggest that concrete made with addition of 10% of basalt powder gives more strength compared to all other mixes. The mechanical characteristics of concrete were determined for optimum addition of basalt powder. Workability of concrete by replacing the basalt powder is to be evaluated.

Keywords: Cement, Basalt Powder, Durability, Structural behavior, Strength.

1. INTRODUCTION

Concrete is most widely used as a construction material due to its specialty of being cast in any desirable shape [1]. For the last few decades the construction techniques have been modernized with focus on high strength, dense and uniform surface texture, more reliable quality, improved durability, and faster construction. One of the recent advancement in construction industry is replacement of material in concrete. The amount of cement production emits approximately equal amount of carbon dioxide into the atmosphere [2]. Natural resources are slowly decreasing because continuous production of huge quality of cement on daily basis. Therefore additional burden has credit an opportunity to utilize the supplementary materials. As there are different wastes coming from the industries and these waste becoming problem to dispose. Hence, we can use those wastes as the constituents of concrete by replacing or partially replacing the cement, sand or aggregates which makes cost reduction, energy savings and production of environment, economical and finally conserves the natural resources. Sustainability in concrete production can be achieved by innovation in substitution of materials used in the constructions [3]. And the mineral admixtures also used in the concrete to increase the strength of structures.

The basalt powder also considers as the one of the mineral admixtures and it also increase the durability of concrete. In this study basalt powder is replaced as cement,So we reduce the usage of cement in the construction[4]. And basalt powder also produced the same strength compared with cement using concrete. It is waste powder from the asphalt mixture production. In asphalt mixture production the mineral aggregate is dried in the temperature of 200 degree Celsius [5]. The waste powder is leaves from the dryer after crushing. And the fine material is treated as a waste powder. And it can be estimated 27-35 thousands of waste powder has been per year in Kuyavian-Pomeranian Voivodeship in Poland[6].

2. OBJECTIVE

To determine the properties of materials and mix proportion of concrete.To study the mechanical properties of concrete with and without addition of basalt powder in concrete for cement replacement material.To study the optimization of basalt powder is to be derived.

3. MATERIALS

3.1 Cement

Cement act as a binding material of concrete preparation. And it is bind the coarse aggregate and fine aggregate with the help of water, to a monolithic matter and also fills the void in the concrete. In the present report,

Development of Cost Effective Utility Blocks Using Lime Rich Chicken Eggshell Powder Infused Cement Concrete

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ABSTRACT
Concrete is widely used for the construction of buildings, road, bridges etc, which is the backbone of the development of infrastructure. Hence concrete is the cardinal material for construction. Major replacement studies and experiments were done for coarse and fine aggregate. Here we undergo replacement for cement with the egg shell powder and incinerated egg shell powder. Egg shell is a poultry waste which nearly has the similar properties of limestone present in cement. Replacement of egg shell powder with cement by the measure of 10, 20, 30, 40% by weight and all other parameters of items are kept constant [1,2,3]. Workability, compression and split tensile strength, flexural strength test was conducted and compared with the conventional concrete. All the test was investigated after 7, 14, 28 days of standard curing. Hence this paper undergoes a study of properties of concrete with partial replacement of Egg shell powder and Incinerated Egg shell powder.

INTRODUCTION

Concrete is a very strong and versatile mouldable construction material. It consists of cement, sand and aggregate (e.g., gravel or crushed rock) mixed with water. The cement and water form a paste or gel which coats the sand and aggregate. When the cement has chemically reacted with the water (hydrated), it hardens and binds the whole mix together. The initial hardening reaction usually occurs within a few hours. It takes some weeks for concrete to reach full hardness and strength. Concrete can continue to harden and gain strength over many years. The construction Industry is the second largest industry of the country after agriculture. It makes a significant contribution to the national economy and provides employment to larger number of people. Construction activity is an integral part of country's infrastructure and industrial development and is poised for further growth on account of industrialization, urbanization, economic development and people's rising expectations for improved quality of living. Energy plays a crucial role in growth of developing countries like India. In the context of low availability of non-renewable energy resources coupled with the requirements of large quantities of energy for Building materials like cement, the importance of using industrial waste cannot be under estimated.

The primary objective of this study was to understand the possibilities of use of ESP and IESP in concrete. Investigations were systematically conducted on performance of ESP and IESP concretes in terms of strength properties like compressive strength and splitting tensile strength, flexural strength test[5,6]. The conventional and ESP and IESP replaced concretes were tested for 7, 14 and 28 days.

EXPERIMENTAL PROGRAM

Ordinary Portland cement of grade 53 confirming to IS 12269-1987, River sand confirming to grading zone III of IS 383-1970 as fine aggregate, well graded coarse aggregate passing through 20mm sieve confirming IS 383-1970 and Egg shell powder procured from local industry is grained and sieved to the required size is used for the experimental study.

MATERIALS USED

- ✓ Cement
- ✓ Fine aggregate
- ✓ Coarse aggregate
- ✓ Water
- ✓ Egg shell powder

Cement

Table 1 Physical Properties of Cement

S.No	Properties	Relevant Is Code	Result
1.	Standard Consistency Test	IS 4031(Part IV):1988	33%
2.	Fineness Test	IS:4031(Part III):1988	5%
3.	Specific gravity	IS:4031(Part II):1988	3.15
4.	Initial setting time	IS:4031(Part V):1988	38 min
5.	Final setting time	IS:4031(Part III):1988	380 min

Table 2 Chemical Properties of Cement, ESP And IESP

S.No	Chemical Composition	Cement	ESP	IESP
1	CaO	63.8%	50.7%	45.0%
2	SiO_2	21.4 %	0.09%	0.05%
3	Al_2O_3	5.1 %	0.03%	0.02%
4	Fe_2O_3	2.6 %	0.02%	0.02%
5	MgO	0.36 %	0.01%	0.01%
6	K_2O	1.88 %	NIL	NIL
7	Na_2O	0.14 %	0.19%	0.19%

*Referred from journal of Jayakumar.R, Studies on concrete using Fly Ash, Rice Husk and Egg shell powder.

PROPERTIES OF CONCRETE WITH REPLACEMENT OF FINE AGGREGATE BY GRANULATED BLAST FURNACE SLAG

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ABSTRACT
The present study deals with use of granulated blast furnace slag (GBFS) as a sand substitute in concrete. The use of GFBS will reduce environmental problems related to the fine aggregate mining and waste disposal of slag. The percentage of GBFS was replaced for 0%, 20%, 40%, 60%, 80% of natural sand for the standard w/c ratio of 0.45 is considered. Demands for natural sand in concrete are increasing day by day. GBFS is one of the by product from steel in manufacturing industries. This waste is in the form of blast furnace slag is usually damped in the ground of the industries and they cause harmful effect to environment. Laboratory tests include compressive strength, tensile strength, and flexural strength of conventional concrete and concrete with replacement of fine aggregate by GBFS.

Keywords: concrete, compressive strength, tensile strength, flexural strength, granulated blast furnace slag,

1. INTRODUCTION

The advancement of concrete technology can reduce the consumption of natural resources and reduces the pollution of the environment. Now a day's huge amount of slag generated from various iron manufactured industry. The waste slag form cause a great impact on environment and humans. Blast furnace slag is by product of steel industries. The molten slag has a composition of 40% silicon dioxide and 39.3% calcium oxide, which is closely to the chemical composition of river sand. Research shows that blast furnace slag gives large pozzolanic reaction and improved the bond between the paste and aggregate. It reduce the use of natural sand and cost of making concrete [1-2]. After the molten iron tapped off the remaining molten slag, which mainly consist of siliceous and aluminous residues, is then rapidly water-quenched, resulting in the formation of a glassy granulate. This glassy granulate is dried and ground to the required size is known as granulated blast furnace (GBFS). The possibility of GBFS for partial replacement as fine aggregate was carried out by Jyoti R. Mali, et al [3]. Ahmed Mohmed Ahmad Blash and Vara Lakshmi Vara Lakshmi [4] reported that the more than 7.8 million tons of blast furnace slag is produced in India. Alternative materials such as recycled aggregate, iron ore tailing waste and copper slag waste, were used in the concrete production was experimented by Ugama and Zine Kiran Sambhaji [5-6].

2. MATERIAL

Cement

Ordinary Portland cement of 53 grade confirming to IS: 8112-1989 was used in this study. The physical properties were tested and results are given in Table 2.1

Table 2.1 Properties of Cement

S.No	Description	Test Results
1	Specific gravity of cement	3.15
2	Fineness of cement	1.17
3	Standard consistency of cement	30%
4	Setting time Initial setting time Final setting time	 33 min 310 min
5	Soundness of cement	2.2 mm

Properties of Concrete with Partial Replacement of Coarse Aggregate by Rubber Tyre

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ABSTRACT

Concrete is one of the most widely used construction material all over the world. In which coarse aggregate also plays a vital role, due to various usage soon it will reach the demand like fine aggregate. To overcome this problem it has to be replaced by various materials which should satisfy the strength properties. One such material is waste rubber tyre. All over the world more than 1000 million tyres where manufactured and only 7% are recycled, 11% were burned for fuels and 5% were exported. The remaining 77% are sent to landfills or illegally dumped. The dumped tyre causes pollution in environment, soil and land. These tyres can be reused as a partial replacement of coarse aggregate in various cases like non-load bearing structures. Rubber has good damping and vibrating characteristics, hence can be use in various structures. These replaceable concretes are used in special circumstances such as non- load bearing structures, noise reduction, earthquake resistance structures, foundation for machines and railways. It is replaced by rubber in various percentages of 5, 10, 15, 20%. Properties such as compressive, split tensile and flexural strength were made.

Key words: Waste rubber tyre, compressive, split tensile, flexural strength test.

1. INTRODUCTION

Rapid growth in industry and use of vehicles and production of tyre is also increased day by day. Due to increase in production wastage of tyre is also increased which causes hazards to environment [1]. To get rid of these defects in environment the waste tyre can be recycled or reused in various cases. One such method is replacing waste rubber instead of coarse aggregate [2,3]. Waste rubbers can be used in four ways and are chipped tyre, crumb tyre, slit tyre and shredded tyres [4-6]. Chipped rubber can be used instead of coarse aggregate and crumb tyre can be used instead of fine aggregate. In this project, reuse of waste rubber tyre in concrete as partial replacement of coarse aggregate [7]. Different partial replacement of chipped rubber by volume of coarse aggregate are cast and tested for compression strength, split tensile strength and flexural strength [8,9]. In this paper, the study is to evaluate some fresh and hardened properties of concrete produced by replacing natural coarse aggregate by chipped tyres [10]. Due to the partial replacement of natural aggregate by tyre the reduction in weight is also occurred [11]. It is mainly used in panels that require low unit weight, rail- roads to fix rails to the ground, roofing tiles etc. It also improves the qualities such as light weight, elasticity, heat insulating properties, high resistance to abrasion, durability, absorbing the shock and vibration etc [12-13].

2. MATERIALS PROPERTIES

2.1 Properties of Rubber Tyre

A typical rubber consists of 24 to 28% of carbon black, 40 to 48% of natural rubber and 24 to 36% of synthetic rubber. The used rubber tyres are collected from the remoulding shops and cleaned for further use [14]. These rubber tyres are cut into chipped aggregate of maximum nominal size more or equal to 20mm. These tyres are sieved and the rubbers are collected for replacement work [15]. Various test where done and the result obtained for chipped rubber aggregates are shown table 2.1.

Fig 2.1 Chipped rubber tyre of size 20mm

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Experimental Analysis of the Use of Coconut Shell as a Course Aggregate in Concrete

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ABSTRACT
The cost of conventional building materials increasing every day and it is a major factor affecting constructions. This has necessitated research to find alternative materials of construction so that the availability of materials made easy for construction. In this study, a alternate building material, the coconut shell is used as light weight aggregate in concrete. The properties of coconut shell and coconut shell aggregate concrete is examined and the use of coconut shell aggregate in construction is tested. Conventional coarse aggregate in concrete will be partially used so as to control the quality of concrete. While natural material in coconut shell as a coarse aggregate, it will be investigated to replace the natural coarse aggregate in concrete. The project paper aims to analyse the compressive strength characteristics with partial replacement for M30 grade concrete. The project also aims to show that the Coconut shell aggregate is a potential construction material and it simultaneously reduces the environment problems.

KEYWORDS – Coconut shell,, Coarse aggregate, Codes and Standards, Mechanical properties.

OBJECTIVE OF THE PAPER

The main objective is to encourage the use of these agricultural waste products as construction materials in low-cost housing. In this studies, M30 concrete mixes with different combination of natural material content namely 25%,50% and75%.Three sample specimen will be prepared for each concrete mixes[1]. The parameters will be tested are compressive strength, tensile strength, modulus of elasticity

INTRODUCTION

Concrete is the widely used number one construction material in the world. Concrete manufacturing involve consumption of ingredients like cement, aggregates, water and admixtures. Among all these ingredients, aggregates form the major part. The high demand for concrete in the construction using normal weight aggregates such as granite gets drastically reduced from the natural stone deposits and this has damaged the environment, thereby causing ecological imbalance[2]. Hence it is needed to explore and to find out suitable replacement to substitute the natural stones and makes the concrete as sustainable and environmentally friendly construction material.

The crushed stone and sand are the components that are usually replaced with light weight aggregates. Lightweight concrete is typically made by incorporating natural or synthetic lightweight aggregates' or by entraining air into a concrete mixture. Natural organic waste materials are used for making lightweight concrete. Some of the lightweight aggregate used for lightweight concrete productions are pumice, perlite, expanded clay or vermiculite, coal slag, sintered fly ash, rice husk, straw, sawdust, cork granules, wheat husk, oil palm shell and coconut shell[3].

Coconut shell is grown in more than 90 countries worldwide and India occupies the premium position. India is the third largest producer of coconut products in the world. Coconut trees are widely cultivated in the southern states of India, especially in the Kerala and Tamilnadu. Coconut shells get accumulated in the mainland without being degraded for around several decades. Disposal of these coconut shells is therefore a serious environmental issue[4].

In this juncture, the study on use of coconut shell as a substitute or replacement for coarse aggregate in concrete, is gaining importance in terms of possible reduction of waste products in the environment and finding a sustainable alternative for non-renewable natural stone aggregates.

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Experimental Investigation on Durability Properties of Quaternary Blended Cement Concrete Incorporated With Glass & Carbon Hybrid Fiber

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ABSTRACT

A lot of work has been done on replacement of cement with supplementary cementitious materials like Fly ash, Rice Husk Ash, Lime Powder, Silica fume etc. Fibre Reinforced Concrete (FRC) consists of high strength fibre embedded in a cementitious matrix. The addition of hybrid fibre enhances the tensile strength, flexural strength, ductility and energy absorption of the concrete members. This paper presents the experimental investigations carried out to study the Strength and durability properties of quaternary blended cement concrete with glass fibre and carbon hybrid fibres. The objective of this study aims to characterize the optimum percentage of quaternary system involving replacement of cement with fly ash, Lime Powder and Rice Husk Ash with glass fibre and carbon hybrid fibres. The Glass and Carbon hybrid fibres are added with different combinations in the ratio of minimum 0.5% to maximum 2% to the weight of cementitious material on M30 grade of concrete.

INTRODUCTION

The advancement in Science, technological and industrial revolution has resulted in the environmental pollution. To avoid pollution, there is an increasing interest in the utilization of waste materials. In the case of construction industry there has been a growing trend towards the development and the use of waste as supplementary cementitious materials. The common pozzolanic agents from industry and agricultural by product such as fly ash, Rice husk ash are becoming active areas of research. It also leads to reduction in cost and negative environmental effect. Blending of a large amount of waste materials such as fly ash, silica fume, rice husk ash (RHA), etc. is being done in large extents in the manufacture of cement and cementitious products Kathirvel.et al 2013[1].

The replacement of cement by supplementary material results in savings of the materials and reduces the emission of CO_2 in the atmosphere, since the production of one ton of cement produces approximately one ton of CO2 in the atmosphere. Pozzolanic materials react with calcium hydroxide during hydration reaction and forms calcium silicate hydrate. This can reduce the size of the pores of crystalline hydration products, make the microstructure of concrete more uniform and improve the impermeability and durability of concrete. These improvements can lead to an increase in the service life of a concrete structure.

The RHA is a super pozzolan since it contains amorphous silica in cellular microstructure and has about 85% to 90% silica content and has proven to be a valuable material for making highly durable concrete. It increases the durability and strength of concrete. The use of reactive RHA as supplementary cementitious material may lead to reduction of the emissions of carbon dioxide caused by the cement production. It can also improve the mechanical and durability properties of concretes.

The replacement of cement by RHA has another environmental advantage: the carbon remaining in the ash, which could be released to the atmosphere during a long storage period, is trapped in the concrete. The same effect of RHA is expected in other Supplementary Cementitious Materials such as fly ash Beeralingegowda, and Gundakalle (2013) [2]. The addition of limestone in the cement leads to a totally different behavior than Portland cement with respect to the resistance in high sulfates environment. Pandeyshivam, et al (2017) [3] The materials like fly ash and limestone reduces green house gas emission proportionately and result in a more "green concrete", through reduction of energy consumptions (energy require to produce cement) and prevent the depletion of natural resources.

The utilization of this by product is a big problem from the aspects of disposal, environmental pollution and health hazard. The benefits of limestone as a partial replacement of Portland Cement (PC) are established so that high early strength has been reported by about 10% which in turn fills the voids as CSH gel, preventing the negative properties of leaching at the later stages.

The addition of about 1.5% chopped glass fibres Chandramouli et al (2010) [4] (by weight) to the material increases the modulus of rupture by about 20%. Glass fibres improve the strength of the material by increasing the force required for deformation and improve the toughness by increasing the energy required for crack propagation. The effect of adding fibres increased the compressive strength of concrete.

Confinement of Concrete by Basalt Fiber Fabric Wraps By Varying L/D Ratio, Geometry and Grades of Concrete

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Abstract:
The main aim of this research is to investigate the success of basalt fiber fabric wrapping for improving the compressive strength of concrete members. In this paper, we have considered cube, cylinder and prism shaped specimens of different dimensions with three different mixes were considered. As per IS recommendations, the effect of grade of concrete on compressive, mix design were carried out. The specimens were wrapped with 3 layers and it is cured for 28 days. The specimens were wrapped to analyze the compressive strength in various conditions by comparing it with normal concrete specimen without wrapping. Then the results obtained from the wrapped and unwrapped specimens shows, increase in compressive strength with increase in number of layers of wrapping.

Keywords: Basalt fiber, Wrapping, Confinement, Compressive strength, Structural repair and Strengthening.

1. Introduction

Fiber Reinforced Composite materials are being considered for application to the damaged buildings due to their low weight, easy handling of materials and rapid implementation[1]. This technology involves a method of refining, blending and compounding natural fibers from cellulosic waste streams to form a high- strength fiber composite material in a polymer matrix[2]. FRC is high-performance fiber composite achieved and made possible by cross- linking cellulosic fiber molecules with resins in the FRC material matrix through a proprietary molecular re-engineering process, yielding a product of exceptional structural properties[3].

1.1 Structural Damage due to Earthquake

Earthquakes are a severe structural hazard that causes vibrations in the structures due to the ground shaking. Other destructive effects on structures due to an earthquake are sliding away from their foundations and their horizontal or vertical movements that may make the structures unsafe. An earthquake is an abrupt movement or tremor of the earth's crust that is initiated below or at the surface. The earth's surface is moving continuously in a slow motion, due to which the plates at the surface also move along the globe[4]. With the movement of the plates, they rub against each other or spread apart, and at a certain point the strain developed exceeds the capability of the plates to withstand more forces and they break, causing an earthquake. At the construction joins, the bending moments and shear forces are maximum. During earthquakes, the structural damages are mostly seen at the joints[5]. The diagonal cracks at the joints are due to the insufficient shear reinforcement in the structures. Rehabilitation and retrofitting strategy must reduce these deficiencies from the structures.

Figure 1: Failure at Construction Joint

1.2 Corrosion Problems in India

The commonly used construction material is Cement Concrete reinforced with steel bars. One major blemish with this is its vulnerability to environmental attack that will severely reduce the strength. In humid conditions, atmospheric moisture trickle through the concrete cover and reaches the steel reinforcement. Due to the process of rusting, steel bars gets expand and forces the concrete cover out resulting in spalling of concrete cover [6]. This revel the reinforcements to direct environmental attack and it accelerates the rusting process. Due to this, it weakens the concrete structure to a higher degree. Due to the rusting process, the cross sectional area of steel

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Influence of M-Sand in Hybrid Fibre Reinforced Concrete by using Steel and Jute Fibres

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ABSTRACT:
The concept of using fibres to improve the characteristics of construction materials in concrete (reinforced concrete) as well as increase strength and ductility. This study investigated the development of M20 grade concrete and enhancement in efficient properties of hybrid fibres such as Steel and Jute fibres.Performance of Conventional concrete is enhanced by the additional of fibers in concrete. Adding a single type of fibre into concrete has limited functions, so many current researches are oriented to the development of hybrid fibre in concrete to obtain better mechanical properties. The main reason for steel and jute fibre used in concrete matrix is to improve the ductility and to provide crack resistance and crack control. This investigation is to study the properties like Compressive strength, Tensile strength and Flexural strength of fibre reinforced concrete with varying fibre content of 0.5%, 1.0% & 1.5 % by weight of cement.

1. INTRODUCTION

The river sand has been used mainly as fine aggregate in theconstruction of pavements and other structures. Due to the rapidgrowth of the infrastructural development in the world compelsthe demand for river sand. Also as the supply of suitable naturalsand material near to the part of construction is becomingexhausted, the cost of the sand is increasing. Hence a replacementmaterial to river sand is needed and the finer materials from crushingoperations are more suitable materials as substitute materials.Since the supply of river sand is limited and its continuous supplyis not guaranteed, use of manufactured sand (M-Sand) as an alternativeto river sand has become inevitable. ICAR (The internationalCenter of Aggregates Research) research project work was showedthat concrete can successfully be made using unwashed M-sandwithout modifying the sand. With the use of manufactured sandin concrete there was increase in flexural strength, improved abrasionresistance, increased unit weight and lowered permeability [9].

As a new green building material used for replacing naturalsand, manufactured sand (also called as machine-made sand, artificialsand or crushed-stone sand) has become important inresearches, productions and engineering applications of premixed concrete. With the progressive application, manufacturedsand has been used from partially to completely replacing the natural sand in concrete and the limitation of stone powder inmanufactured sand has changed to an approved proper content [14].

Construction of high-rise buildings, long span bridges, and offshorestructures has made steel fibers important in improvingthe properties of concrete such as strength, toughness, energyabsorption capacity, and durability. The addition of steel fibers inhigh performance concrete (HPC) can improve the brittle behaviorand the energy absorption capacity. Hence, steel fiberreinforced concrete plays a significant role in developing modernconcrete technology, which represents a new class of constructionconcrete. In recent years, extensive research performed to explorethe use of steel fiber in producing high strength fiber reinforcedconcrete (HSFRC). The comparison between mechanical propertiesof high strength fiber reinforced concrete has been presented[13].

In the case of geopolymer, the use of fibre to improve the brittlenessis comparatively new compared to conventional concrete.There have been a few studies carried out in the area of fibre reinforcedgeopolymer (FRG). For example, Genesa et al. studied thebasic properties of steel fibre reinforced geopolymer (SFRG) withfibre volume fractions varying from 0.25 to 1.0% and a concretestrength of 40 MPa. They found increases in both compressiveand splitting tensile strengths of about 8.51% and 61.63%, respectively,in SFRG with the fibre volume fraction at 1% [10].

These days, several fibres, such as steel, synthetic, and naturalfibres are used for the development of the fibre reinforced cementcomposites. Nevertheless, the natural fibres including jute haverecently attracted the attention of scientists and technologists forthe development of the green and sustainable cement composite. An extensive research has been executed to improve the ductility,flexural strength and fracture toughness of cement compositeby reinforcing with natural fibre. The most importantreason for the use of natural fibres as fibre reinforcement is theirabundant availability, low-cost, low-density and environmentalfriendliness [1].

Structural Behavior of Concrete Beam with Basalt FRP Rods and Basalt Powder

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Abstract:
A desire to upgrade the structural integrity and life of the concrete structures has brought about new developments in the area of concrete technology. Basalt is a new emerging material, gaining popularity recently and is made from basalt rock. Due to the limited amount of research on the use of basalt for structural applications, further investigation are still required to provide confidence in the use of basalt materials in the reinforced concrete structures. In this proposed work, the ordinary concrete is replaced with partial replacement of basalt powder as cement replacing material and basalt rod as a reinforcing material. The effect of basalt powder on the strength of concrete for M30 grade has been studied by varying the percentage of basalt powder in concrete. Basalt powder was varied by 0%, 5%, 10% and 15% by volume of concrete. The specimens were casted to evaluate the strength of the concrete and the optimum dosage level of basalt powder content was found. By using the optimum level of basalt powder, the beam was casted with and without basalt FRP rod as a partial reinforcing material to evaluate structural behavior of the reinforced beam and the results was compared respectively.

Keywords: *Basalt FRP rod, Basalt powder, Reinforced concrete beam, Load carrying capacity, Deflection*

1.Introduction

Concrete structures are usually reinforced because plain concrete has strong limitations to resist tension. One of the familiar reinforcing material is steel; it suits well as reinforcement but it is susceptible to various attack such as corrosion and other environmental attacks. Fiber Reinforced Polymer (FRP) have over the past years became an interesting choice as a reinforcement for concrete and it represent a potential solution to this situation. There are various types of FRP rods available in the market such as, Carbon FRP rods, Glass FRP rods, etc. Basalt Fiber Reinforced Polymer (BFRP) rod which is a new material to structural design that made from basalt rock has light weight and have tensile strength, over twice as high as steel. Due to the large width of crack in beams reinforced with basalt bars compared to reinforced concrete beams, it is necessary to give minimum amount of reinforcement, to reduce the width of crack in bending [1]. The experimental study is to determine the bond dependent coefficient (Kb) and the structural performance of BFRP in concrete beams. The results were showed as typical bilinear behavior for strain and deflection until failure and with low reinforcement ratios showed sharp increases in strains and deflection at cracking and the axial stiffness significantly affected the behavior of BFRP-RC beams [2]. The flexural strength of beams is improved largely whereas axial load carrying capacity of columns for basalt reinforced specimens is less than that of steel reinforced specimen [3]. The compressive strength and flexural strength of IPC were around 80% of those of OPC. The crack patterns in basalt reinforced IPC beam were found to be similar to control beam and the maximum crack width of basalt reinforced beam was approximately 2times that of control beam [4]. Mineral admixtures generally improve rheological properties of fresh concrete. They improve cohesion and reduce the tendency for segregation. These materials may also reduce the hydration of heat and improves the long term properties of hardened concrete [5].

From the literature review, it was observed that the basalt FRP rod with minimum reinforcement will reduce the crack in bending, showed sharp increase in strains and deflection at cracking. The flexural strength of beams is improved largely whereas axial load carrying capacity of basalt FRP rod is less than the steel rod in the reinforced concrete structures. And the use of mineral admixtures can improves cohesion and reduces segregation of the concrete.

2. Experimental investigation:

The experimental program is to study the structural behavior of the beam with partial replacement of cement with basalt powder and replacement of steel with basalt FRP rods used as partial reinforcing material.

A Study on Precast Concrete Technology

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ABSTRACT
In this study we have carried out a detailed study on various concepts of precast, gone through a number of literature and found the facts associated with it. We have taken one precast building as a case and compared it with traditional Cast in-situ method. Here we have made cost analysis as well as feasibility check on basis of costing, duration and quality. For more practical study we have visited ongoing and finished construction sites of Precast and cast in-situ, gathered required information. From this analysis, it is remarkably seen that the duration of construction is much lesser than the traditional method and also the cost of precast building is almost the same as that of the traditional method considering the material and labor escalation charges. From all this study we can conclude that the precast concrete system is economical than conventional cast in place method but still there are some conditions which we have to take care of while using precast, those include volume of the construction, distance between site and manufacturing unit, type of building etc.

KEY WORDS: *Precast concrete, Rate analysis, Time, Man Power.*

1. INTRODUCTION

Ancient Roman builders made use of concrete and soon poured the material into moulds to build their complex constructions such as culverts, and tunnels [1]. Now a day various construction systems such as Slip Form, Tunnel Forming, Pre-Engineering, Precast, etc., are widely adopted in public buildings as well as in private building projects [2]. The standardization and mechanization has brought a substantial change in the development of the construction industry worldwide over last few decades. Recently in India use of precast in building construction is increasing rapidly. Precast concrete is well known technology in which structural elements i.e. Columns, Beams, Shear Walls, Staircases, etc., which are manufactured in factories are used for fast construction [3]. The concept of precast (also known as "prefabricated") construction includes those buildings, where the structural components such as Columns, Beams, Shear Walls, Slabs and Staircases are produced in plants/factory (controlled environment) in a location may away from the building at the site itself. In this method concrete is prepared, poured in formwork and cured in controlled environment [4]. In this method quality of concrete can be assured because concrete is prepared and cured in controlled environment. Then the casted elements are transported to site by using various logistics equipments for erection or assembly work [5,6].

1.1. OBJECTIVE OF THE STUDY

- Construction of similar building elements wherein there could be a huge repetition of moulds resulting in increased productivity and economy in cost by using precast concrete.
- To explore problems of implementation of precast building technology
- To study different stages and process involved in precast concrete construction of commercial, industrial and residential sectors.
- To compare the cost and time between precast concrete and cast-in-place concrete.
- To explore future opportunities in precast concrete construction.

2.1. LITERATURE STUDY

Akash Lanke et al., (June 2016) [1] carried out a thesis to analyze the design, cost and time of precast and RCC buildings. Apart from these factors various other minor factors such as speed of construction, quality control, environmental conditions, labor resources, durability, connection, size, shape etc are also considered for the analysis. The cost and duration are compared as major factors. one building is chosen as a case study and Design is done for the same building as a precast building and Traditional Cast in-situ building. From this analysis It is remarkably seen that the cost of precast building is significantly reduces & duration of construction is also much lesser than traditional method. From all this study we can be conclude that the precast concrete system is economical than conventional cast in place method but still there are some conditions which we have to take care of while using precast, those are quantity of construction, Distance of site from manufacturing unit, Type of building etc.

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

Treatment and Reuse of Greywater at Household Level-A Review

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ABSTRACT

India is facing a water crisis and by 2025 it is estimated that India's population will be suffering from severe water scarcity. Although India occupies only 3.29 million km2 geographical areas which form 2.4% of the worlds land area, it supports over 15% of world's population with only 4% of the world's water resources. With increased population growth and development, there is a need to critically look at alternative approaches to ensure water availability. These alternative resources include rainwater and bulk of water used in household will emerge as grey water and contain some minerals, organic waste materials dissolved and suspended in it. When this is allowed to flow out this will join the sewage and bacteriological contaminants, resulting in a sewage stream. It is possible to intercept this grey water, at the household level, treat it so that it can be recycled for garden washing and flushing purposes. The issue of greywater management – which is defined as all sources of domestic wastewater excluding toilet wastewater – is gaining more and more importance, especially in developing countries where improper wastewater management is one of most important causes for environmental pollution and fatal diseases. In recent years not only the threats of improper greywater management have been recognized; there is an increasing international recognition that greywater reuse, if properly done, has a great potential as alternative water source for purposes such as irrigation, toilet flushing and others.

KEYWORDS: Grey water, Reuse, Irrigation. Waste water Management, Sand Filters, Electro- Oxidation, Electro-Coagulation

1. INTRODUCTION

A. Grey water

Grey water is all wastewater that is discharged from a house, excluding black water (toilet water). This includes water from showers, bathtubs, sinks, kitchen, dishwashers, laundry tubs, and washing machines (Figure. No: 1). It commonly contains soap, shampoo, and toothpaste, food scraps, cooking oils, detergents and hair. When properly managed, grey water can be a valuable resource from which horticultural and agricultural growers as well as home gardeners can benefit from. Grey water makes up the largest proportion of the total wastewater flow from households in terms of volume. Typically, 50-80% of the household wastewater is grey water. If a composting toilet is also used, then 100% of the household wastewater is grey water .Not all grey water is equally "grey". Kitchen sink water, laden with food solids and laundry water that has been used to wash diapers is more heavily contaminated than grey water from showers and bathroom sinks. Therefore, different grey water flows may require different treatment methods that would render the water suitable for reuse. Grey water reuse reverse the non-sustainable tendency of increasing surface and groundwater extraction to satisfy the rising demand of fresh water, some changes must be done in order to decrease potable water consumption as well as wastewater production without compromising the comfort requirements on use. [1]

B. Characteristics of grey water

Greywater is a reflection of the household activities and its characteristics are strongly dependent on living standards, social and cultural habits, number of household members and the use of household chemicals .Greywater from bathtubs, showers and hand washbasins is considered as the least polluted grey water source. The average grey water contribution to the total organic load (BOD) amounts to about 40 – 50%. Greywater also contributes to one fourth of the total suspended solids and up to two thirds of the total phosphorous load. Dishwashing and laundry detergents are the main sources of phosphorous in grey water. Kitchen grey water is the main source of nitrogen in domestic grey water, while the lowest levels are generally observed in bathroom and laundry grey water [2]

A Case Study on "Performance of Water Quality in around Namakkal districts in Tamilnadu

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ABSTRACT:

This case study paper is aimed to identify environmental and health impacts of untreated or inadequately treated wastewater effluents. The quality of wastewater effluents is responsible for the degradation of the receiving water bodies. Due to use of contaminated water, human population suffers from water borne diseases. In this paper Namakkal in around areas ground water pollution to agriculture soil due to the natural shale value of heavy metals in soil system Water is one of the vital needs of all living beings. The quality of water usually described according to its physical, chemical and biological characteristics. Hence it becomes necessary to find the suitability of water for drinking, irrigation and Industry purpose. The reuse of treated effluent (for agriculture and as supplement for drinking water needs) is currently receiving attention as a reliable water source. Parameters that may be tested include temperature, pH, turbidity, salinity, nitrates, TDS, Cations, Anions and phosphates. In extension, recreational water users and anyone else coming into contact with the infected water is at risk. In order to comply with wastewater legislations and guidelines, there is a need for adequate treatment before discharge. This can be achieved through the application of appropriate treatment processes, which will help to minimize the risks to public health and the environment. To achieve unpolluted wastewater discharge into receiving water bodies, careful planning, adequate and suitable treatment, regular monitoring and appropriate legislations are necessary.

Keywords- *Ground water, drinking water*, *Municipal wastewater, Water quality parameters, Namakkal districts***.**

1. Introduction

Ground water, surface water (rivers, streams and ponds), atmospheric water (rain-water, snow and hail) and springs are the main source of water available to the people in general. The qualities of these water bodies vary widely depending on the location and environmental factors. The major source of ground water is precipitation that infiltrates the ground and moves through the soil and pore spaces of rocks. Other sources include water infiltrating from lakes and streams, recharge ponds and waste-water treatment system [1]. As ground water moves through soil, sediment and rocks, many impurities such as disease-causing micro-organisms are filtered out. Many water resources in developing countries are unhealthy because they contain harmful physical, chemical and biological agents. To maintain a good health however, water should be safe to drink and meet the local standards and international standards to taste, odour and appearance. Now required as much importance as water quality According to WHO, about 80% of all the diseases in human beings are caused by contaminated water. Once the groundwater is polluted, its quality cannot be renovated by stopping the pollutants from the source [2,3]. It is therefore vital to regularly monitor the quality of groundwater. Groundwater pollution by heavy metals has been given much attention due to their low biodegradability and toxic effects. The water from the sources *viz.*, streams, falls, lake, hand pump, open well and bore well are contaminated with domestic, agricultural and industrial wastes and likely to cause water related diseases6. Similarly, Bullard7 inferred that polluted surface water always results in an unhealthy socio-economic environment. In this study, physicochemical parameters are determined to draw a conclusion on the quality of water whether it is good or unfit for drinking purpose. [4,5]

2. Literature Review

The extensive literature review was carried out by referring standard journals, reference books and conference proceedings. The major work carried out by different researchers is summarized below. Another author [6] focused on the hydrochemistry of groundwater in the Jaipur city to assess the quality of groundwater

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

EXPERIMENTAL STUDY ON STABILIZATION OF SOIL USING RICEHUSK ASH

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ABSTRACT
This paper investigates the stabilizing effect of the rice-husk ash on soil. The rice-husk ash was collected and powdered form for suitable addition to the soil in varying proportions namely 0%, 2.5%, 5%, 7.5% and 10% by the weight of the soil sample throughout. Consequently the moisture content, specific gravity, particle size distribution, and Atterberg limit tests were carried out to classify the soil. Soil stabilization can be explained as the alteration of the soil properties by chemical and physical means in order to enhance the engineering quality of the soil, its resistance to weathering process and soil permeability. Various tests were carried out on the soil with and without addition of rice-husk ash. The result showed the improvement in the maximum dry density values on the gradual increase in addition of rice-husk ash. This paper deals with the complete analysis of the improvement of soil properties and stabilization using rice-husk ash.

1. INTRODUCTION

Soil stabilization is the process of the alteration of the geotechnical properties to satisfy the engineering requirements. Numerous kinds of stabilizers were used as soil additives to improve its engineering properties. A number of stabilizers, such as lime, cement and fly ash, depend on their chemical reactions with the soil elements in the presence of water. However, soil stabilization using rice-husk ash involves advantages and disadvantages [1, 2]. This study provides details of advantages and disadvantages inherent to ash treated soil, proposing an alternative material was discussed

Soil stabilization is the alteration of soils to enhance their physical properties. Stabilization can increase the shear strength of a soil and control the shrink-swell properties of a soil, thus improving the load bearing capacity of a subgrade to support pavements and foundations [3].

Soil stabilization can be utilized on roadways, parking areas, site development projects, airports and many other situations where sub-soils are not suitable for construction [4]. Stabilization can be used to treat a wide range of sub grade materials, varying from expensive clays to granular materials. This process is accomplished using a wide variety of additives, including lime, fly-ash, and Portland cement [5,6]. Other material by products used in stabilization includes lime-kiln dust (LKD) and cement-kiln dust (CKD) of soil.

2. MATERIALS AND METHODS

2.1. Location of Study Area

The soil sample was collected from Salem location. The type of soil is clay soil.

2.2. Materials

The rice husk ash are collected as admixture and added to the soil and test is conducted. Chemical characteristics of rice husk ash powder are given below Table 1 respectively.

TABLE 1: Content in % weight

Oxide	Sio_2	Fe_2O_3	CaO	MgO	K_2O	Na_2O	P_2O_5	Al_2O_3
Percentage	93.4	0.06	0.31	0.35	1.4	0.1	0.8	0.06

2.3. Method of Testing

The collected sample was stabilized with rice-husk ash. The soil was adding with ash by 0%, 2.5%,5%, 7.5% and 10%.

The laboratory tests carried out on the soil sample includes grain size distribution Sieve Analysis, Specific Gravity Atterberg's Limits, Standard proctor compaction test, Unconfined Compression Test, California Bearing Ratio (CBR) Test.

A STUDY OF FACTORS INFLUENCING QUALITY OF CONSTRUCTION PROJECTS

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ABSTRACT

The construction industry plays a vital role in the economy. The construction industry is complex in its nature because it comprises large numbers of parties' owners (clients), contractors, consultants, stakeholders, and regulators. Despite this complexity, the industry plays a major role in the development and achievement of society's goals. The need for achieving quality of the finished product in the building construction is very important.

Quality is an essential element for sustainability and customer satisfaction. Quality in its simplest from can be defined as 'meeting the customer expectations', or 'compliance with customer specification'. No matter what definition we follow for quality, it becomes very complex when we try to put it into actual practice. This study is intended to provide clients, project managers, designers, and contractors with necessary information needed to better manage the quality of a construction building projects by identify the factors that affect process quality of construction projects and to rank them by degree of importance.

1. INTRODUCTION

The construction industry plays a vital role in the economy. The construction industry is complex in its nature because it comprises large numbers of parties as owners (clients), contractors, consultants, stake holders, and regulators. Deposit this complexity; the industry plays a major role in the development and achievement of society's goals.

Quality has become a very popular subject in recent years due to conceptual changes in the industry Quality and quality systems are topics which have been receiving increasing attention worldwide. The product in any industry should be manufactured to a required standard, one that provides customer satisfaction and value for money. The need for achieving quality of the finished product in the building construction is very important. The high cost of buildings makes it necessary to ensure quality of the finished product. Quality is an essential element for sustainability and customer satisfaction. In construction projects, quality performance is considered as vital for client satisfaction. This study is intended to provide clients, project managers, designers, and contactors with necessary information needed to better manage the quality of a construction building projects by indentify the factors that affect process quality of construction projects and to rank them by degree of importance.

In this study, it will be studied the factors affecting the quality performance of construction projects. It can be used to measure performance in construction projects. This will be a key component of any organization move towards achieving best practice in order to overcome the quality performance problem in the construction projects.

2. QUALITY MANAGEMENT IN CONSTRUCTION

The construction industry is typified by highly differentiated, fragmented and loosely structured system. Developing a quality system is the first step towards improving quality in construction industry. A quality system consists of the following.

- Quality policy
- Organization structure
- Procedures
- Processes
- Training
- Quality manual

A Study of Delay Management, Cost Overrun and Risk in a Construction Projects

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ABSTRACT :

The construction industry is one of the industrial sectors with the lowest rates of fulfilment of contract deadlines, especially in developing countries. A survey on time performance of different types of construction projects in Saudi Arabia was conducted to determine the causes of delay and their importance according to each of the project participants, i.e., the owner, consultant and the contractor. The field survey conducted included 23 contractors, 19 consultants, and 15 owners. Seventy three causes of delay were identified during the research. 76% of the contractors and 56 % of the consultants indicated that average of time overrun is between 10% and 30% of the original duration. The most common cause of delay identified by all the three parties is "change order". Surveys concluded that 70% found that 45 out of 76 projects considered were delayed. Factor analysis and work with the variables that can be identified and measured in the initial phase of the project, i.e., during the feasibility study, demonstrate that the physical characteristics of the apartments and the construction project are the primary causes for variations in construction delays. The main aim of this paper was to find out the main causes of delay in Building construction projects. To minimize delays in construction projects it has been identified that the top three effective methods of minimising construction delays includes: site management and supervision, effective strategic planning, and clear information and communication channel. Analysis performed on eight factors' scores highlighted the influence of five significant factors on managing cost overruns. And the objective of this study is to identify the major causes of construction delays, its effects and minimising delays in construction projects. This study is carried out based on literature reviews and questionnaire survey.

KEYWORDS: construction delay, risk, delay mitigation, consultants, clients, cost overrun and contractors.

1. INTRODUCTION

The construction industry is one of the main sectors that provides important ingredients for the development of an economy. The construction industry is the tool through which a society achieves its goals of urban and rural development. However it is becoming more complex because of sophistification of the construction process itself and the large number of parties involved in the construction process, i.e., clients, users, designers, regulators, contractors, suppliers, subcontractors and consultants. Modern construction parties are characterised by new standards, advanced technologies, multi party participation and frequent owner-desired changes. Coupled with this state are inherent uncertainties and complexities in the physical, financial, and economic environment in which most projects are performed. Such conditions have made completing projects on schedule and on budget a difficult task to accomplish, often leading to claims on cost compensations and time extensions. This eventually leads to delay in the completion of the project.

Delay could be defined as the time over run either be on completion date specified in a contract or beyond the date that the part is agreed upon for delievery of a project. It is slipping over its planned schedule and is considered as common problem in construction projects. Delay in construction project is considered one of the most common problems causing a multitude negative effect on the project and is participating parties. Therefore it is essential to identify the actual cause of delay in order to minimize and avoid the delays and their corresponding expenses.

Proc. Second International Conference on Civil, Structural & Environmental Engineering "ICSEE-2019" , K.S.R.College of Engineering , Tiruchengode, Tamilnadu, India , 15th March 2019

A Study on Equipment Maintaince and Its Management in Large Construction Companies

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ABSTRACT
The project discusses in brief about collecting data from any two well established construction companies in INDIA. The data regarding equipment details like planning, selection, Work schedule and it control, Economic and commercial considerations of the Equipment, the Economical value of construction equipments should also be taken into consideration. The details about ownership cost, operating cost, precaution and safety of the equipment, i.e. various types of maintenance records are of immense value. The data regarding layouts of workshop and its section of both the construction companies are studied. The Do's and Don'ts and the precautionary measures for maintenance of equipments are to be taken into account in establishing and managing the maintenance functions of equipment in both the construction companies. After completing the collection of the data and making required entries in various records for both the companies, they were compared for the following parameters (i) Usage and availability of the equipments, (ii) The Overall maintenance cost, (iii) Maintenance cost of each equipment. After comparing, a modern methodology namely FAILURE MODE EFFECT ANALYSIS (FMEA) has been introduced as a tool for carrying out maintenance cost of equipments FMEA is applied for a Tower Crane, Concrete Mixers and motor graders to know its functions, severity, causes and effects of the failure based on all these criteria, the Risk Priority Number (RPN) for these equipments is observed. That increase in RPN value increase the failure causes.

KEYWORDS: Tower Crane, maintenance, Work schedule, Planning.

1. INTRODUCTION

The advent of heavy construction equipment and the approach of large construction company of converting the construction sector to a more mechanized and in turn an organized sector has made it mandatory for maintaining the fleet of equipment to perform to its optimum.

Since machinery and equipment which have became a integral part of any construction activity, plants and machineries now constitute a substantial portion of the construction cost in a project (in tune of 10 to 30 percent of total project cost depending upon the extent of mechanization), has maintained to turn the Project into profit making center for any organization, because the cost of maintenance of any equipment is in tune of 200 to 250 percent of cost equipment it has become imperative for going in for maintaining the equipment during its expected Life cycle. Equipment maintenance is a science because it involves scientific and technical know how of different machineries for identical problem, it may require different action or process. We need equipments for technical and speedy construction and at the same time for economical and timely completion of project.

2. LITERATURE REVIEW

1. Ali A. Shash and Shuaib Ghazi (2001) Construction equipment constitutes a major resource for a contractor. This paper presents the results of a survey performed to unfold the practices followed by contractors in Saudi Arabia in managing their construction equipment. It was possible to find that contractors in Saudi Arabia follow practices similar to those followed by top contractors in the USA. They were found to identify needs, evaluate alternative proposals quantitatively and qualitatively, and make decisions to acquire equipment. During its useful life, contractors maintain accurate records and subject equipment to preventive and scheduled maintenance programs. The contractors also use several economic analysis techniques to determine the economic life, pricing, rate of returns, accounting, etc. of equipment. This information and other parameters are used in equipment replacement evaluation.

2. **David J. Edwards**, **Gary D. Holt**, (2009) A literature review is presented in the subject of construction plant and equipment management (CPeM) to: delineate the subject; consider its development over recent years; and identify principal themes within it. The paper aims to close the gap in knowledge, by using these objectives as a mechanism to observe how research themes relate to primary CPeM

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Full Length Article

Cosdes: A Collaborative Spam Detection System With A Novel E-Mail Abstraction Scheme

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ABSTRACT: E-mail communication is indispensable nowadays, but the e-mail spam problem continues growing drastically. In recent years, the notion of collaborative spam filtering with near-duplicate similarity matching scheme has been widely discussed. The primary idea of the similarity matching scheme for spam detection is to maintain a known spam database, formed by user feedback, to block subsequent near-duplicate spams. On purpose of achieving efficient similarity matching and reducing storage utilization, prior works mainly represent each e-mail by a succinct abstraction derived from e-mail content text. However, these abstractions of e-mails cannot fully catch the evolving nature of spams, and are thus not effective enough in near-duplicate detection. This paper proposes a novel e-mail abstraction scheme, which considers e-mail layout structure to represent e-mails. A procedure is presented to generate the e-mail abstraction using HTML content in e-mail, and this newly devised abstraction can more effectively capture the near-duplicate phenomenon of spams. Moreover, a complete spam detection system Cosdes (standing for Collaborative Spam Detection System) is designed, which possesses an efficient near-duplicate matching scheme and a progressive update scheme. The progressive update scheme enables system Cosdes to keep the most up-to-date information for near-duplicate detection.

1 Introduction

Data mining is the process of extracting patterns from data. Data mining is seen as an increasingly important tool by modern business to transform data into an informational advantage. It is currently used in a wide range of profiling practices, such as marketing, surveillance, fraud detection, and scientific discovery.

Clustering is an automatic learning technique aimed at grouping a set of objects into subsets or clusters. The goal is to create clusters that are coherent internally, but substantially different from each other. In plain words, objects in the same cluster should be as similar as possible, whereas objects in one cluster should be as dissimilar as possible from objects in the other clusters.Automatic document clustering has played an important role in many fields like information retrieval, data mining, etc. The aim of this thesis is to improve the efficiency and accuracy of document clustering. In this proposed system two clustering algorithms and the fields where these perform better than the known standard clustering algorithms.

Clustering is a division of data into groups of similar objects. Each group, called cluster, consists of objects that are similar between themselves and dissimilar to objects of other groups. In other words, the goal of a good document clustering scheme is to minimize intra-cluster distances between documents, while maximizing inter-cluster distances (using an appropriate distance measure between documents). A distance measure (or, dually, similarity measure) thus lies at the heart of document clustering.

Clustering is the most common form of unsupervised learning and this is the major difference between clustering and classification. No super-vision means that there is no human expert who has assigned documents to classes. In clustering, it is the distribution and makeup of the data that will determine cluster membership. Clustering is sometimes erroneously referred to as automatic classification; however, this is inaccurate, since the clusters found are not known prior to processing whereas in case of classification the classes are pre-defined. Document clustering is being studied from many decades but still it is far from a trivial and solved problem. The challenges are:

- Selecting appropriate features of the documents that should be used for clustering.

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Full Length Article

SCENE TEXT RECOGNITION IN IMAGES BY CHARACTER STRUCTURE CONFIGURATION AND DESCRIPTOR

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ABSTRACT: Camera-Based text information serves as effective tags or clues for many mobile applications associated with media analysis, content retrieval, scene understanding, and assistant navigation. In natural scene images, text characters and strings usually appear in nearby sign boards and provide significant knowledge of surrounding environment and objects. Text characters and strings in natural scene can provide valuable information for many applications. Extracting text directly from natural scene images is a challenging task because of diverse text patterns and variant background interferences. This paper proposes a method of scene text recognition from detected text regions. In text detection, the previously proposed algorithms are applied to obtain text regions from scene image. The paper designs a discriminative character descriptor by combining several state-of-the-art feature detectors and descriptors. Second, it models character structure at each character class by designing stroke configuration maps. The design is compatible with the application of scene text extraction in images. The system is developed to show the effectiveness of our proposed method on scene text information extraction from nearby objects.
.

Keywords: Character Descriptor, Text Detection, Scene Images.

1 Introduction

Image Processing is a technique to enhance raw images received from cameras/sensors placed on satellites, space probes and aircrafts or pictures taken in normal day-to- day life for various applications. Various techniques have been developed in Image Processing during the last four to five

decades. Most of the techniques are developed for enhancing images obtained from unmanned spacecrafts, space probes and military reconnaissance flights. Image Processing systems are becoming popular due to easy availability of powerful personnel computers, large size memory devices, graphics softwares etc.

Image analysis is concerned with making quantitative measurements from an image to produce a description. In the simplest form, this task could be reading a label on a grocery item, sorting different parts on an assembly line, or measuring the size and orientation of blood cells in a medical image. More advanced image analysis systems measure quantitative information and use it to make a sophisticated decision, such as controlling the arm of a robot

to move an object after identifying it or navigating an aircraft with the aid of images acquired along its trajectory.

Image analysis techniques require extraction of certain features that aid in the identification of the object. Segmentation techniques are used to isolate the desired object from the scene so that measurements can be made on it subsequently. Quantitative measurements of object features allow classification and description of the image.

Image segmentation is the process that subdivides an image into its constituent parts or objects. The level to which this subdivision is carried out depends on the problem being solved, i.e., the segmentation should stop when the objects of interest in an application have been isolated e.g., in autonomous air-to-ground target

NCETET19/ Civil13	S.Ramesh,Bragadeeswaran.T[1] , Logesh.S[2], Ranjith Kumar.T[2], Surenthiran.A[2], Thanigaivelan.K.S[2]	Civil	K.S.Rangasamy College of Technology, Tiruchengode, Namakkal	AN EXPERIMENTAL STUDY ON STRENGTH AND BEHAVIOUR OF AIR ENTRAINED LIGHT WEIGHT CONCRETE	13

NCETET'19-National Conference Proceedings Papers for CSE department

NCETET'19 / CSE & IT 01	ARCHANA.S BHAVATHARANI.R KOUSALYA.V D.LAVANYA	CSE	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY	EFFICIENT RANKED MULTI-KEYWORD SEARCH ON MOBILE CLOUD	14
NCETET'19 / CSE & IT 02	K.DEEPTHIKA B.MADHUBALA R.ANJU S.POOVIZHI	CSE	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY	SMART IOT DRIP	15
NCETET'19 / CSE & IT 03	K.DINESHKUMAR K.KUMARESAN V.SENTHILKUMAR S.KUBENDRAN G.LINGESH M.PASUPATHI K.PRAVEEN	CSE	K .S .R COLLEGE OF ENGINEERING	SCENE TEXT RECOGNITION IN IMAGES BY CHARACTER STRUCTURE CONFIGURATION AND DESCRIPTOR	16
NCETET'19 / CSE & IT 04	GOMATHI SUVAIKIN PUNITHA BUVANA KOWSALYA MEENAPRIYADHARSHINI	CSE	N.S.N COLLEGE OF ENGINEERING AND TECHNOLOGY	AUTOMATIC DETECTION OF MOTORCYCLE WITHOUT HELMET USING IOT	17

NCETET'19 / CSE & IT 05	M.SAKTHI MEENA MALARMATHI E INDUJA S DHANYA S	CSE	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY	SMART PEER CAR POOLING SYSTEM	18
NCETET'19 / CSE & IT 06	M.KEERTHIVASAN, R.KISHORE , M.MALATHI G.MONICA , V.SENTHILKUMAR , K.KUMARESAN , K.DINESHKUMAR	CSE	K.S.R. COLLEGE OF ENGINEERING	PROVIDING SECURITY AGAINST IP CROWDSOURCED SPOOFING ATTACKS ON CLOUD USING TOPOGUARD ALGORITHM	19
NCETET'19 / CSE & IT 07	B.PRAVEENKUMAR1,GAYATHRIDEVI.R2, DIVYA BALA PREETHI.A2,DEVAKI.S2	CSE	EXCEL ENGINEERING COLLEGE, NAMAKKAL.	ANALYSIS AND DETECTION OF BONE TUMOR IN MRI IMAGE USING MACHINE LEARNING	20
NCETET'19 / CSE & IT 08	I. VASUDEVAN D. KAVIYA S. NARMADHA S. NAVEEN S. PAVIESHKUMAR	CSE	K .S .R COLLEGE OF ENGINEERING	SECURE MOBILE PAYMENT TRANSACTION SCHEME USING OPTIMISTIC FAIR EXCHANGE (OFE) PROTOCOLS WITH TPA MODEL	21
NCETET'19 / CSE & IT 09	S.Keerthana , S.Madhan , K.MadhanKumar , K.Nilesh, C.Thirumalai selvan	CSE	K.S.R COLLEGE OF ENGINEERING	PUBLIC AUDITING FOR SHARED CLOUD ENVIRONMENT WITH EFFICIENT USER REVOCATION IN THE SHARED CLOUD ENVIRONMENT	22
NCETET'19 / CSE & IT 10	K.VIJAYA , V.P.KOWSHIKA S.MONISHA , G.S.KAUSHIKA	CSE	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY	SMART IRRIGATION AND SOIL MONITORING SYSTEM USING IOT	23

NCETET'19 / CSE & IT 11	K. NANDHAGOPAL T. DINESH KUMAR	CSE	P. A. COLLEGE OF ENGINEERING AND TECHNOLOGY	AN ANDROID APPLICATION FOR ONLINE BUS PASS RENEWAL SYSTEM	24
NCETET'19 / CSE & IT 12	S.VIVEKANADAN, L.KAVIYA D.MEGALA, S.KOWSALYA	CSE	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY	TYPLOTIC SIGNIFICANCE USING MOBILE APPLICATION	25
NCETET'19 / CSE & IT 13	GOWTHAMBIKA.L, BARATH KUMAR .A, KIRUTHIKA.B VISHNUPPRIYA.S	CSE	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY	CO-REVIEW PERSPECTIVE BASED MOBILE APP FRAUD DETECTION USING FINER CLUSTER ALGORITH	26
NCETET'19 / CSE & IT 14	DR.K.GANESH KUMAR, P JAYASURYA, N JEEVANANTHAN, M JEEVARASU, KARAN KUMAR	CSE	K.S.R. COLLEGE OF ENGINEERING	SELF DRIVEN CLOUD BASED MULTI PLATFORM MALWARE DETECTION SYSTEM	27
NCETET'19 / CSE & IT 15	A. SELVANAYAGI V.GOKULAPRIYA D.KANIMOZHI P.KANIMOZHI R.KEERTHANA	CSE	M. KUMARASAMY COLLEGE OF ENGINEERING	AIR QUALITY PREDICTION USING DEEP LEARNING TECHNIQUES	28
NCETET'19 / CSE & IT 16	T.SIVAKUMAR L.KALICHARAN M.SUREKHA R.S.SELVANITHILA	CSE	DR.MAHALINGAM COLLEGE OF ENGINEERING AND TECHNOLOGY	SMART VEHICLE INSURANCE VERIFICATION SYSTEM	29

NCETET'19 / CSE & IT 17	A. KALIAPPAN M. SABARIVEL	CSE	P. A. COLLEGE OF ENGINEERING AND TECHNOLOGY	PROFICIENT VALUATION AND ESTIMATION OF HUMAN PERFORMANCE IN COLLECTIVE LEARNING ENVIRONMENTS USING MACHINE LEARNING	30
NCETET'19 / CSE & IT 18	MR. S. VADIVEL K. KAVIN V. MANIVANNAN M. PRAEEP S. PRAEEP	CSE	K .S .R COLLEGE OF ENGINEERING	IMPROVE DIABETICS DISEASE PREDICTION FOR IRIS IMAGE USING SVM AND MLP CLASSIFICATION MODEL	31
NCETET'19 / CSE & IT 19	D.Kavin kumar[1], A.Kavipriya[2], J.Logeshwaran[3], E.Nandhakumar[4]	CSE	K.S.R. COLLEGE OF ENGINEERING	TRUST BASED ALLOCATING AND SHARING RESOURCES VIA SOCIAL NETWORKS WITH MULTIPARTY SECURED ACCESS CONTROL	32
NCETET'19 / CSE & IT 20	1 Gowsalya P, 2 Jagadeesan M	CSE	Kongu Engineering College,	COSDES: A COLLABORATIVE SPAM DETECTION SYSTEM WITH WEB LINK BASED ABSTRACTION SCHEME	33
NCETET'19 / CSE & IT 21	K.Logeswaran ,K.R.Prasanna kumar , Dr.P.Suresh	CSE	Kongu Engineering College, Perundurai, Tamilnadu	AUGMENTING THE PERFORMANCE OF HIGH UTILITY ITEMSET MINING	34
NCETET'19 / CSE & IT 22	S.Savitha 1 , Dr.A.Rajivkannan 2 , Dr.V.Vennila 3	CSE	K.S.R COLLEGE OF ENGINEERING	Dimensionality Reduction and Data Partitioning using Feature Hybridization Scheme	35

NCETET'19 / CSE & IT 23	S.JAFAR ALI IBRAHIM Dr.M.THANGAMANI K. Pavith Kumar	CSE	Kongu Engineering College, Perundurai, Tamilnadu	Big Data – Driving a Revolution in Personalized Medicine	36
NCETET'19 / CSE & IT 24	K.MOHANAPRIYA, P.ANANTHI J.AYSHA FATHIMA AFREENA K.GUHAN	CSE	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY	SECURED TRANSMISSION OF MEDICAL DATA USING ENCRYPTION AND VIDEO WATERMARKING	37
NCETET'19 / CSE & IT 25	NAVANEETHA.G RAMYA.K SHARMILA.K PONNI.S	CSE	VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY	STUDENTS MONITORING SYSTEM	38
NCETET'19 / CSE & IT 26	Harini M, 2 Selvaraj P A	CSE	Kongu Engineering College,	SURVEY OF SOFTWARE BUG LOCALIZATION USING DATA MINING ANALYTICAL CLUSTERING MODEL	39
NCETET'19 / CSE & IT 27	1 Selvanandham S, 2 Rahunathan L	CSE	Kongu Engineering College,	Effective Credit Card Fraud Detection Using Self Organization Mapping with SVM Model	40
NCETET'19 / CSE & IT 28	NITHYA .N.S ARJHUN .S GOKUL .E JAGANNATH .V.R JAYASURYA .D	CSE	K.S.R. COLLEGE OF ENGINEERING	WORK FLOW MANAGEMENT WITH REAL-TIME TASKS ORIENTED ENERGY-AWARE SCHEDULING IN VIRTUALIZED CLOUDS	41

NCETET'19-National Conference Proceedings Papers for ECE department

NCETET19/ ECE 1	S.PARTHIPAN, G.PRIYANKA, DR.R.POORNIMA	ECE	K.S.R.College of Engineering	Automatic mobile platform for physically challenged people in railway junction	72
NCETET19/ ECE 2	R.DHINESH KUMAR	Industrial Safety Engineering	KSR College of Engineering	Ambient quality monitoring in the automobile manufacturing plant	73
NCETET19/ ECE 3	M.SHANMUGAM, P.V.BAVANYAA, P.GOBIGA, B.GOWTHAM, P.JANANI	ECE	Builders Engineering College	Automativ vehicle tracking for public transport in smart cities	74
NCETET19/ ECE 4	G.PREM KUMAR, C.B.SUBHASHINI, R.THIRUMALAI KUMAR, N.YASWANTH	ECE	Dhirajlal Gandhi College of Technology	Sericulture monitoring and control system	75
NCETET19/ ECE 5	G.VIJAYAKUMARI, D.BABY, B.MOHAN KUMAR, R.MUTHULAKSHMI	ECE	Builders Engineering College	Melanoma detection using HLS design methodology	76
NCETET19/ ECE 6	N.MUTHU KUMAR	Industrial Safety Engineering	KSR College of Engineering	Noise level reduction in manufacturing industry by using an engineering controls	77
NCETET19/ ECE 7	M.NAVEENKUMAR , S.B.NITHIYA , M.SANJAY SRIRAM , A.VELLIANGIRI	ECE	K.S.R.College of Engineering	Natural disaster alert system using wireless sensor networks	78
NCETET19/ ECE 8	C.S.SANDEEP, A.SUKESH KUMAR	ECE	College of Engineering university of kerala	The Early interpretation of Alzheimer’s Disease Using Fundus Imaging and Optical Coherence Tomography	79

NCETET19/ ECE 9	P.ARUN KUMAR, VIBIN MAMMEN VINOD	ECE	Kongu Engineering College	A topology survey of LED driver in automotve applications	80
NCETET19/ ECE 10	A.Janani , Dhananjaya Panda Dr. J. Vijayakumar	E&I	Bharathiar University	THE INTEGRATED MIRROR: A SMART MIRROR FOR ATTANDENCE SYSTEM BASED ON FACE RECOGNITION	81
NCETET19/ ECE 11	A.ANGESWARAN, B.MENAGHA, V.MOHAN KUMAR, S.MONISHA	ECE	K.S.R College of Engineering	Fisherman border alert system	82
NCETET19/ ECE 12	P.NAVEEN KUMAR , P.PAVITHRA ,S.SANTHOSH KUMAR , S.VENKATESH	ECE	KSR College of Engineering	FILTENNA	83
NCETET19/ ECE 13	V.RAJKUMAR, Dr.AZHA PERIASAMY	E&I	Bharathiar University-Coimbatore	An unmanned horn surfacequality inspection system using raspberry PI	84
NCETET19/ ECE 14	S.PRIYADHARSHINI , N.RADHAKRISHNAN A.SABAREESWARAN P.DINESH BABU	ECE	KSR College of Engineering	REMOTE MONITORING	85
NCETET19/ ECE 15	G.VIJAYAKUMARI, G.DHARANNI, N.DIVAKAR, G.HEMAMALINI	ECE	K.S.R.College of Engineering	Extraction of textusing optical character reader	86
NCETET19/ ECE 16	E.RAMYA, K.GOMATHI SREE	ECE	Bannari Amman Institute of Technology	License Plate Localisation based on Morphological Operations	87
NCETET19/ ECE 17	K.sruthi,Dr.J. Vijayakumar, L.Jeganson Durai	E&I	Bharathiar University	Localization of the Exudates from Retinoblastoma Diseased Fundus Images using DIP Techniques	88

NCETET19/ ECE 18	SHANMUGA PRIYA.S , M.TAMIL SELVI , S.PRIYA DHARSHINI	ECE	MIET, TRICHY	DETECTION OF AFFECTED CLUSTER USING INTERACTIVE KEYMEANS FOR BRAIN TUMOUR	89
NCETET19/ ECE 19	Mr.K.KARUPPANASAMY, A.ANUSUYA, S.APARNA, A.GENO ARUL, M.INDHUMATHI	ECE	K.S.R.College of Engineering	Identification of fruit and flower detection using image processing	90
NCETET19/ ECE 20	B.RENUSREE, S.DHARSHINI	ECE	BANNARI AMMAN INSTITUTE OF TECHNOLOGY	Detection of Unhealthy Plant Leaves using Image Processing and Genetic Algorithm	91
NCETET19/ ECE 21	S.POOMANI, J.VIJAYAKUMAR, L.JEGANSON DURAI	E&I	Bharathiar University	STUDY OF COTTON PLANT DISEASES AND METHODS OF DISEASE IDENTIFICATION USING DIGITAL IMAGE PROCESSING TECHNIQUES	92
NCETET19/ ECE 22	S.MAHENDRAN, C.MEENAKSHI, L.DEEPIKA	ECE	Builders Engineering College	Milk products monitoring system using PIC microcontroller	93
NCETET19/ ECE 23	V.NARMADHA, Dr.AZHA PERIASAMY	E&I	Bharathiar University-Coimbatore	A validation system for enamel removingfrom the horn coil using raspberry PI	94

NCETET'19-National Conference Proceedings Papers for EEE department

NCETET'19 / EEE01	Dr. R. Sankar Ganesh, M.E, Ph.D., 1 M. Barna Allwin, 2S. Mohammed Aashik, 2 M. Nandhini, 2 R. Nisha,	EEE	KSRCE	TO DEVELOP AN AUTOMATIC COCONUT DEHUSKING AND WASTE PULVERIZER MACHINE	95
NCETET'19 / EEE02	R.Rathika , P.Shanmugapriya , V.D.Sabarinathan , P.Sivasankar rajamani	EEE	KSRCE	ANALYSIS OF THREE IOT BASED WIRELESS SENSORS FOR ENVIRONMENTAL MONITORING	96
NCETET'19 / EEE03	B. Gokul Raj, M.Kodeeswari, S .Vimal Kumar, D .Mani kandan P. Krishna Kumar.	EEE	KSRIET	Automatic train track fault detection	97
NCETET'19 / EEE04	Gayathri, HariHaran, Jeeva, MadhanRaj	EEE	KSRIET	Design of Smart Wheelchair and Vital Signs Monitoring For paralytic patients	98

NCETET'19 / EEE05	P.IRAIANBU, T.SANTHOSH, T.SOUNDARARAJAN, P.SAKTHIVEL	EEE	Muthayammal College of Engineering.	Fuse Blown Indicator in Substation ,Power Plant.	99
NCETET'19 / EEE06	D.Kalidass, J.Vimal, S.Bharathi and V.Logeshwaran	EEE	Muthayammal College of Engineering.	DESIGN OF LOW COST WEARABLE REMOTE HEALTH MONITORING AND ALERT SYSTEM FOR ELDERLY HEART PATIENTS	100
NCETET'19 / EEE07	J.Thiyagarajan[1], R.Dipakaran[2] S.Gowthaman[3] S.Manikandan[4] R.Parthiban[5]	EEE	K.S.R. College of Engineering, Tiruchengode	IOT BASED MEDICINE BOX FOR MEDICATION MANAGEMENT	101
NCETET'19 / EEE08	Dr.C.Nagarajan , N.Balasubramaniyan , M.Hari , P.Johnlouis	EEE	Muthayammal College of Engineering.	IoT based Smart Agriculture	102
NCETET'19 / EEE09	Dr.C.Nagarajan 1 , N.Balasubramaniyan 2 , M.Hari 3 , P.Johnlouis 4	EEE	Muthayammal College of Engineering.	IOT Based Smart Home, Security Challenges, Security Requirements and Solutions	103
NCETET'19 / EEE10	StephenRaj.M.A ,Anandkumar.N ,GobinathVP ,HagasthiyaR.J	EEE	KSRIET	SMART HELMET FOR WORKERS SAFETY IN HAZARDOUS ENVIRONMENT USING IOT	104

NCETET'19 / EEE23	K. Jeevitha, R. Shanmugalakshmi	EEE	GCT,Coimbatore.	COMPARATIVE STUDY OF AUTOMATIC LOAD FREQUENCY CONTROL USING PID AND FOPID CONTROLLER	117
NCETET'19 / EEE24	Dr.R.Sathees Kumar,Bhavadharani.B Chandru.G Mugunthan.M	EEE	KSRCE	DETECTING ATTACKS IN WIRELESS SENSOR NETWORK	118
NCETET'19 / EEE25	Dr.R.SATHEESH KUMAR L.Aarthi ,H.Izlal Ahmed ,D.Karthikeyan	EEE	KSRCE	IMPROVEMENT IN MULTIPLE ACCESS CHANNEL ALLOCATION IN SENSOR NODE	119
NCETET'19 / EEE26	S.Ramesh1C.Dinesh2 A.Divya Bharathi3 V.Gokulraj4 S.Narmatha 5, M.B.Ramkumar6	EEE	KSRCE	AUTOMATIC WATER AND PESTICIDE SPRAYING FARMBOT	120
NCETET'19 / EEE27	Dafeena Raj,Gokulalakshmi Y P,MohanaPriya A	EEE	BIT,Sathy.	SAVVY FARM (IOT BASED)	121
NCETET'19 / EEE28	C.Arunkumar, P.Dickman Pious, V.Gowtham, Dr.R.JeyaBharath	EEE	KSRIET	IOT based Remote Braking System and Security Enhancement For Automobiles	122

NCETET'19 / EEE29	KALAIVANI.C, Dr.E. LATHA MERCY	EEE	GCT,Coimbatore.	Delta power control for grid connected multistring PV inverters by fuzzy based MPPT and CPG mode	123
NCETET'19 / EEE30	R. Dheivanai , Dr. B. Karthik	EEE	Sona college of tech.	Effective Transformer utilization monitoring using full bridge converter	124
NCETET'19 / EEE31	J.Muruganantham , Dr.B.Karthik	EEE	Sona college of tech.	Statistical analysis of PD Characteristics of Nano Modified Corn Oil with mineral oil for the Application of Medium voltage Transformer	125
NCETET'19 / EEE32	M M SURENDHAR K R YOKESH KANNA S YOGAPRIYA S MONIKA	EEE	KSRIET	Real Time Fault Detection and Problem Solving in Industrial Motor Network With Internet Platform Using Labview	126
NCETET'19 / EEE33	Dr. M. Somu[1] , V. Priyanka[2] , M. M. Sangeetha[3] , P. Satheeshkumar[4] , K. Sivachandran	EEE	KSRCE	FACE-NAME TRACKING ANALYSING SYSTEM BY CLUSTER USING CONSTRAIN K-MEANS	127
NCETET'19 / EEE34	P. Karthick , R. Muralidharan , M. Pavithr , P. Pavithra B. Yuvarani1	EEE	KSRCE	Smart Borewell Optimizer And Monitoring System To Enhance Borewell Life	128

NCETET19 / MECH08	S.Sarath Kumar and Mr.K.Venkateshwaran	MECHANICAL	KSR College of Engineering	Construction Safety in Hazardous Confined Space	136
NCETET19 / MECH09	Mr.S.Baskaran,R.Santhosh kumar, G.Sathishkumar, R.Sarankumar and B.Thirumoorthy	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Design and Analysis of Fins With Various Parameters	137
NCETET19 / MECH10	Mohan.N.S, Karthic Raja.E.M, Mageshwaran.V ,Mohammed Farith.M and Nagarjun.N	MECHANICAL	Erode Sengunthar Engineering College, Erode	Investigation on the Properties of Sand Mould Casting using Tea Waste	138
NCETET19 / MECH11	Parthiban.J,Ajithkumar.A, Ajithkumar.A, Arivanandham.M and Arunpandian.P	MECHANICAL	Erode Sengunthar Engineering College, Erode	Mechanical Properties and wear Properties of Coconut Henequen Fibre Reinforcing	139
NCETET19 / MECH12	Rajkumar.T, Kalidass.M, Cheran.S, Harissh.S,Mohamed Hanifa.M & Arunkumar.G	MECHANICAL	K. Ramakrishnan College of Technology, Trichy	Optimization of Friction Stir Welding Dissimilar Aluminium AA2024 and AA2999 Alloy by Using a Response Surface Method	140
NCETET19 / MECH13	A. Prem Kumar, M. Kishore, N. Naveen, P. Prinshith and Robert Sam Daniel	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Performance Analysis of Biodiesel Blends Using CI Engine	141
NCETET19 / MECH14	R.Barathkumar, A.Pranesh, L.Monika, R.Ragu and C.Sanjeevi	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Performance of Welding Characteristic in Aluminium Alloy 5052 Using Gas Tungeston Arc Welding	142
NCETET19 / MECH15	Srinivasamroothy .R, Nandha kumar .M, Pavinesh.S, Kamar jaman.A and Mohammed vajakath ali.A	MECHANICAL	Erode Sengunthar Engineering College, Erode	Pnuematic Pipe Reel Punching Machine	143

NCETET19 / MECH16	Srinivasamoorthy.R,Balakumaran.V,Barath.S, Bharath.L,Elanchezheian.V	MECHANICAL	Erode Sengunthar Engineering College, Erode	Removal of Impurities on Cutting Fluid by Refrigeration Unit and Membrane Based Filter	144
NCETET19 / MECH17	K.Selvaraj, V.C.Aravindkumar, T.Baranidharan, A.V.Anantha Padmanaban and D.Aravind	MECHANICAL	KSR College of Engineering,Tiruchengode	Smart Solar Grass Cutter	145
NCETET19 / MECH18	Mr.M.Sathishkumar, V.Sai Harish, S.Sasikumar, M.Sheikmohamed & C. Sunil Raj	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Setup Change Improvement In Makino A92	146
NCETET19 / MECH19	V.Shanmugam, S.Shyamsundar, G.Umanath, M.Vignesh and M.Vijay	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Design and Analysis of Fins with Various Configuration	147
NCETET19 / MECH20	Manikandan.S, Arunkumar.K, Bharani K and Meganathan. M	MECHANICAL	Erode Sengunthar Engineering College, Erode	Design of Mini Cooler by using Peltier Module	148
NCETET19 / MECH21	Gowrishankar.G, Chakaravarthi.V, Duraimurugan.B, Duraipandiyan.K and Jagathu kiskor.E	MECHANICAL	Erode Sengunthar Engineering College, Erode	Determination of Corrosion Behaviour of Iron Based Products by Nano Fluids	149
NCETET19 / MECH22	Chokkalingam.p,Anbarasu.A, Diwakar.D, Gobinath.D and Gowtham.R	MECHANICAL	Erode Sengunthar Engineering College, Erode	E-Bike By Using Graphene Battery	150
NCETET19 / MECH23	R.Vinoth, A.Asharudeen, E.Balachandar, M.Dinesh Kumar and S.Dinesh	MECHANICAL	Nandha Engineering College, Erode	Enhancement of Mechanical Properties of Magnesium Metal Matrix Composites	151

NCETET19 / MECH24	Gowrishankar.G, Abilash..G, Ajith Kumar.S, Gunasekaran.M and Indira Kumar.M	MECHANICAL	Erode Sengunthar Engineering College, Erode	Experimental Analysis of Corrosion and Superhydrophobic Phenomena on Metals and Ceramics by Nanofluids	152
NCETET19 / MECH25	R. Mohanraj, Santosh Kumar, Sujeet Kumar Singh, Shashikant Kumar, Chandan Gupta and Satish Kumar	MECHANICAL	Selvam College of Technology	Fabrication and Characterization of Rice Husk Bio-Composite Tiles	153
NCETET19 / MECH26	K.Selvaraj, S.Arunraj, R.Arunkumar, S.Ariharaprasath, and I.Babu	MECHANICAL	KSR College of Engineering,Tiruchengode	Fabrication of Two Wheeler Engine Cooling System Using Peltier Plates	154
NCETET19 / MECH27	Mohan.N.S,Sakthi Sundaram.R, Thanigaivelan.L, Sridhar.G.S and Vignesh.R	MECHANICAL	Erode Sengunthar Engineering College, Erode	Generation of Electric Current from Exhaust Gas using See-Beck Effect	155
NCETET19 / MECH28	E.Prakash , K.M.Diwakar, R Ram Aravind and H.Palanivel	MECHANICAL	Bannari Amman Institute of Technology, Sathyamangalam	Investigation of Mechanical Properties of Composite Filament Fabricated With ABS and Copper Nano Particles	156
NCETET19 / MECH29	S. Senthilkumar, M.Meignanamoorthy and M.Ravichandran	MECHANICAL	Mother Terasa College of Engineering and Technology, Pudukkottai.	Effect of SiC Reinforcement on Hardness Behavior of AA6062 Matrix Composites	157
NCETET19 / MECH30	C.Vijay, M.Meignanamoorthy and M.Ravichandran	MECHANICAL	Mother Terasa College of Engineering and Technology, Pudukkottai.	Experimental Investigations on Mechanical Properties of Cu-AlN Composites Fabricated By Powder Metallurgic Route	158
NCETET19 / MECH31	R.Dhinesh Kumar	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Ambient Quality Monitoring in the Automobile Manufacturing Plant	159

NCETET19 / MECH48	G.Velmurugan and Ramya R	MECHANICAL	Excel Engineering College, Namakkal	Design and Analysis of Humpback Whale Shaped Wing	176
NCETET19 / MECH49	M.V.Shanmugam1, M.Ranjithkumar2, K.Pravint2, A.Naveen2 , M.RadhaKrishna2	MECHANICAL	KSR College of Engineering,Tiruchengode	DESIGN AND FABRICATION OF UAV FOR SPRAYING PESTICIDE	177
NCETET19 / MECH50	M. Syed Thasthagir, Pravinkumar.V.P, Arulprakash.G and Gowtham.S	MECHANICAL	KSR College of Engineering,Tiruchengode	Design and Fabrication of Automatic Kickstand Retriving Mechanim for Two Wheelers	178
NCETET19 / MECH51	Arun.C and Dineshkumar.S	MECHANICAL	Shree Venkateshwara Hi-Tech Engineering College,Gobi.	Design and Analysis of Sugarcane Cultivator	179
NCETET19 / MECH52	Chokkalingam.P, Karthik.K, Madhan.R, Manoj.R and Padmanabhan.R	MECHANICAL	Erode Sengunthar Engineering College, Erode	Design and Fabrication of Automatic Folding and Packaging for Readymade Garments	180
NCETET19 / MECH53	C.Veera ajay(1), R.Soundarrajan(2), R.Vignesh(3)	MECHANICAL	Bannari Amman Institute of Technology,	DESIGN AND FABRICATION OF PNEUMATIC SHEARING MACHINE	181
NCETET19 / MECH54	Sivaras R and Sathishkumar T.P	MECHANICAL	Kongu Engineering College, Erode	Effect of Filler Reinforcement on Tribological and Mechanical Properties of Epoxy Composite	182
NCETET19 / MECH55	Lingeswaran.P, Santhosh.M and Vigneshwaran.K	MECHANICAL	Shree Venkateshwara Hi-Tech Engineering College,Gobi.	Evaluate Mechanical Properties of Dashboard Cover By Using Agave Tequalina, Elephant Grass and Juliflora Fibre With Epoxy	183

SCENE TEXT RECOGNITION IN IMAGES BY CHARACTER STRUCTURE CONFIGURATION AND DESCRIPTOR

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ABSTRACT:

Camera-Based text information serves as effective tags or clues for many mobile applications associated with media analysis, content retrieval, scene understanding, and assistant navigation. In natural scene images, text characters and strings usually appear in nearby sign boards and provide significant knowledge of surrounding environment and objects. Text characters and strings in natural scene can provide valuable information for many applications. Extracting text directly from natural scene images is a challenging task because of diverse text patterns and variant background interferences. This paper proposes a method of scene text recognition from detected text regions. In text detection, the previously proposed algorithms are applied to obtain text regions from scene image. The paper designs a discriminative character descriptor by combining several state-of-the-art feature detectors and descriptors. Second, it models character structure at each character class by designing stroke configuration maps. The design is compatible with the application of scene text extraction in images. The system is developed to show the effectiveness of our proposed method on scene text information extraction from nearby objects.

KEYWORDS: *Character Descriptor, Text Detection, Scene Images.*

PROVIDING SECURITY AGAINST IP CROWDSOURCED SPOOFING ATTACKS ON CLOUD USING TOPOGUARD ALGORITHM

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ABSTRACT:

In this paper, we discussed the brief overview of SDN security survey, we specifically investigate the potential lt heats of man-in-the-middle attacks on the Open Flow control channel, we also describe a feasible attack model in the open flow channel, and then we implement attack demonstrations to show the severe consequences of such attacks. Additionally, we propose a lightweight countermeasure using Bloom filters. We implement a prototype for this method to monitor stealthy packet modifications. The successful attacks can effectively poison the Virtual Machine information, a fundamental building block for core SDN components and topology-aware SDN applications. With the poisoned network visibility, the upper-layer Open Flow controller services/apps may be totally misled, leading to serious hijacking, denial of service or man-in-the-middle attacks. The result of our evaluation shows that our Bloom filter monitoring system is efficient and consumes few resources.

KEYWORDS: *IP SPOOFING (Man-In-The-Middle) attacks, IOT (Internet of Things), SDN (Software Defined Networks)*

SECURE MOBILE PAYMENT TRANSACTION SCHEME USING OPTIMISTIC FAIR EXCHANGE (OFE) PROTOCOLS WITH TPA MODEL

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ABSTRACT:

This paper proposes a novel attack detection mechanism, using the trajectory of Arbitrator for identification while still preserving their location privacy communication. A location-hidden authorized message generation scheme is designed for two objectives: first, signaler signatures on messages are signer ambiguous so that the signaler location information is concealed from the resulted authorized message; second, two authorized messages signed by the same signaler within the same given period of time (temporarily linkable) are recognizable so that they can be used for identification. Optimistic fair exchange (OFE) protocols are useful tools for two participants to fairly exchange items with the aid of a third party who is only involved if needed. A widely accepted requirement is that the third party‟s involvement in the exchange must be transparent message, to protect privacy and avoid bad publicity. At the same time, a dishonest third party would compromise the fairness of the exchange and the third party thus must be responsible for its behaviors. This is achieved in OFE protocols with another property called accountability. It is unfortunate that the accountability has never been formally studied in OFE since its introduction ten years ago. In this paper, these gaps are filled by giving the first complete definition of accountability in OFE where one of the exchanged items is a digital signature and a generic (also the first) design of OFE where transparency and accountability coexist.

KEYWORDS: *OFE Protocol, Mobile Payment Transaction, Partial Signature, Full Signature, TPA Authentication.*

PUBLIC AUDITING FOR SHARED CLOUD ENVIRONMENT WITH EFFICIENT USER REVOCATION IN THE SHARED CLOUD ENVIRONMENT

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ABSTRACT:

The data storage and sharing services in the cloud, users can easily modify and share data as a group. To ensure shared data integrity can be verified publicly, users in the group need to compute signatures on all the blocks in shared data. Different blocks in shared data are generally signed by different users due to data modifications performed by different users. For security reasons, once a user is revoked from the group, the blocks which were previously signed by this revoked user must be re-signed by an existing user. The straight forward method, which allows an existing user to download the corresponding part of shared data and re-sign it during user revocation, is inefficient due to the large size of shared data in the cloud.

The public auditing for shared data with efficient user revocation in the shared cloud environment proposed a novel public auditing mechanism for the integrity of shared data with efficient user revocation in mind. By utilizing the idea of proxy re-signatures, it allow, the cloud to re-sign blocks on behalf of existing users during user revocation. So that, existing users do not need to download and re-sign blocks by themselves. In addition, a public verifier is always able to audit the integrity of shared data without retrieving the entire data from the cloud, even if some part of shared data has been re-signed by the cloud. Moreover, this mechanism is able to support batch auditing by verifying multiple auditing tasks simultaneously. Experimental results show that mechanism can significantly improve the efficiency of user revocation.

KEYWORDS: *IB-DPDP, Data sharing, Cloud security, Data possession*

SELF DRIVEN CLOUD BASED MULTI PLATFORM MALWARE DETECTION SYSTEM

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ABSTRACT:

The mobile phones have become the target for risky and snoopy applications. The android‟s current risk communication technique depends on users to identify the permissions that an app is requesting. But the users are unaware of permissions as it requires some technical knowledge. Therefore, android‟s protection against malicious application is risk communication method where any user who wishes to install an app will be warned about permissions, the application would call for and then the user has to take the proper decision. In Google play, the users frequently download and use several applications from various unknown vendors. Therefore, the protection against malware applications should depend on decisions made by users. The main part of protection against malware on mobile devices is to alert the users about malware and permit them to take decisions about whether to choose and install specific apps. Compute risk score that users can apply while choosing applications whether they want to use that app or not.

KEYWORDS: *Android Devices, Risk Score, NLP, Data Mining*

IMPROVE DIABETICS DISEASE PREDICTION FOR IRIS IMAGE USING SVM AND MLP CLASSIFICATION MODEL

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ABSTRACT:

Iris image analysis for clinical diagnosis is one of the most efficient non - invasive diagnosis methods for determining health status of organs Correct and timely diagnosis is a critical, yet essential requirement of medical science. The attempt is being made to explore the area of diagnosis from different perspectives .The approach used is a combination of ancestor's technology Irido-diagnosis with modern technology. Irido-diagnosis is an alternative branch of medical science, which can be used for diagnostic purposes the different algorithms are developed for image quality assessment, segmentation of iris, iris normalization and clinical feature classification for clinical diagnosis. In this paper analysis a simple and non - invasive method to detect diabetic in body and iris recognition is not only mainly for biometric identification but it can also be used as a mean to detect diabetic or maybe diagnose any diseases as iridology claimed it is supposed to be. For clinical feature analysis, enhancement is essential for extraction of deep layer features. For feature extraction various image enhancement methods like arithmetic operation, histogram equalization, and adaptive histogram equalization have been applied. The approach used is a combination of ancestor‟s technology. Irido-diagnosis is an alternative branch of medical science, which can be used for diagnostic purposes. Diabetic Retinopathy is one of the leading causes of blindness and eye disease in working age population of developed world. This paper is a attempt towards finding a automated way to detect this disease in its early phase. In this paper using supervised learning methods to classify a given set of images into different classes. Aim of the paper is to provide automated, suitable and sophisticated approach using image processing and pattern recognition so that DR can be detected at early levels easily and damage to retina can be minimized using ANN Classification.

KEYWORD: *Digital Image Processing, Iris Image, MultiSVM, Segmentation, Clustering, Collective Learning, Deep Learning, Computational Psychometrics, Machine Learning, Human Behavior, Skills.*

DIMENSIONALITY REDUCTION AND DATA PARTITIONING USING FEATURE HYBRIDIZATION SCHEME

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ABSTRACT :

Data mining and machine learning methods are applied to extract knowledge from large databases. The high dimensional data analysis requires huge computational resources and processing time. The performance and accuracy are reduced with reference to the irrelevant, noisy and redundant features. Dimensionality methods are applied for better visualization, data compression, noise removal, understandability and generalization factors. Text mining, web mining, image processing and bioinformatics applications are build with dimensionality reduction methods.

Dimensionality reduction is carried out with two models Feature Selection (FS) and Feature Extraction (FE). Feature selection discovers the suitable features from the original set of features. The feature extraction method transforms the original set of features into required form. The compound feature generation (CFG) model integrates the feature selection and extraction methods to fetch the original and transformed features. The Minimum Projection error Minimum Redundancy (MPeMR) framework is build with Unified iterative algorithm to fetch features in supervised and unsupervised cases.

The Compound Feature generation (CFG) method is build with pairs of features in minimum projection error and redundancy estimation process. The feature hybridization scheme is build to combine the original and transformed features with generalized matching criteria.

KEYWORDS: *Feature Selection, Feature Extraction, Minimum Projection error Minimum Redundancy (MPeMR), Compound Feature generation*

WORK FLOW MANAGEMENT WITH REAL-TIME TASKS ORIENTED ENERGY-AWARE SCHEDULING IN VIRTUALIZED CLOUDS

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ABSTRACT-

The paper‟s objective is to demonstrate how Cloud software technologies can be integrated to implement an effective environment for designing and executing scalable data analysis workflows. The important reasons about the extremely high energy consumption in cloud data centers can be attributed to the low utilization of computing resources that incurs a higher volume of energy consumption compared with efficient utilization of resources. The virtualization technique enables multiple virtual machines (VMs) to be placed on the same physical hosts and supports the live migration of VMs between physical hosts based on the performance requirements. When VMs do not use all the provided resources, they can be. The paper considers Cluster Scoring Based Task Scheduling (CSBTS) algorithm CSBTS which aims to decrease task‟s completion time. We consider not only the computing power of each resource in the cloud but also the transmission power of each cluster in a cloud system. The computing power of each resource is defined as the product of CPU speed and available CPU percentage and the transmission power of each cluster is defined as the average bandwidth between different clusters. CSBTS uses the status of each resource in the cloud as parameters to initialize the cluster score of each cluster. The cluster score of each cluster will be adjusted by applying local update and global update. The system will submit a job to the most appropriate resource according to the scores.

***KEYWORDS*:** *Data Mining Work Flow, CPU Cluster Score, Adaptive Job Scoring Algorithm, Cluster Scoring Based Task Scheduling, Job scheduling*

AUTOMATIC MOBILE PLATFORM FOR PHYSICALLY CHALLENGED PEOPLE IN RAILWAY JUNCTION

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ABSTRACT

Today the cheapest mode of transportation is railway but now no. of accident of railway are increasing due to careless railway crossing. Careless in operations and lack of knowledge of workers are main reason of this, therefore we are trying to find solution of this problem. This paper gives new smart railway track mainly for helping physically disabled and aged persons. This railway track is automatically works in railway platform. Normally two platforms are connected by mobile platforms through which passenger can walk. A disabled person is given an rfid tag, on scanning the tag on the fid reader; a moving floor like path is layered connecting the two rail steels of the track. We placed radio frequency communication modules for achieving the process of finding train on the tracking. With the help of rf module we are trying automatic control of railway gates. When train arrives first the mobile platform will be automatically opened and train goes through track and when train leaving the area the mobile platform will automatically get closed. To sense the presence of train we are using rf module. By sensing the train on one path we are giving pulses to the motor to open or close the mobile platform. Here we have used the atmel microcontroller ATmega8.

AMBIENT AIR QUALITY MONITORING IN THE AUTOMOBILE MANUFACTURING PLANT

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ABSTRACT

Industries are one of the major reason for the Air pollution that causes damage to humans and other living organisms. It causes several disorders and respiratory problems to humans so, it is necessary to control air pollution. The project analysis the air quality in the industrial areas and examine that air pollution can be controlled by source correction, pollution control equipment, diffusion of pollutant in air, vegetation, zoning. The main aim of my project is to control air pollution with national air quality standards with suitable methods.

A SURVEY ON THE BENEFITS OF AUTOSAR IN AUTOMOTIVE INDUSTRIES

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ABSTRACT

The utilization of programming referencestructures assumes a basic job in programming improvement, as it could bring a few advantages, for example, giving intends to configuration applications' product models with higher profitability and quality. In any case, numerous associations still find rare the current experimental proof about the advantages and disadvantages of programming reference structures. Associations need such proof to settle on educated choices regardless of whether to receive a product reference design for the improvement and support of programming applications. In this specific circumstance, this paper plans to accumulate proof on AUTOSAR, a develop and acknowledged programming reference engineering for car applications utilized worldwide by in excess of 180 associations. We planned and executed an online overview routed to specialists with involvement in utilizing AUTOSAR. We acquired 51 legitimate reactions. The study results demonstrate that the most well known advantages of AUTOSAR are institutionalization (88%), reuse (80%) and interoperability (51%) though its most critical disadvantages are multifaceted nature (65%), beginning speculation (59%) and expectation to absorb information (51%). The respondents of the overview additionally offered bearings to deal with the significant downsides of AUTOSAR, for example, the need of an apparatus domain to improve its ease of use and handle its unpredictability, and the need of increasingly stable arrivals of AUTOSAR to diminish the expense of relocating among variants.

NATURAL DISASTER ALERT SYSTEM USING WIRELESS SENSOR NETWORKS

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ABSTRACT

Wireless Sensor Networks (WSN) behaves as a digital skin, providing a virtual layer where the information about the physical world can be accessed by any computational system. Wireless Sensor Networks (WSN) have been Employed to collect data about physical phenomena. As a result, they are an invaluable resource for realizing the vision of the Internet of Things (IoT). The Internet of Things (IoT) provides a virtual view, via the Internet Protocol, to a huge variety of real life objects, ranging from a car, to a teacup, to a building, to trees in a forest. Its appeal is the ubiquitous generalized access to the status and location of any "thing" we may be interested in. The Internet of Things (IoT) is the network of physical objects, devices, vehicles, buildings and other items which are embedded with electronics, software, sensors, and network connectivity, which enables these objects to collect and exchange data. WSNs are integrated into the "IoT", where sensor nodes join the Internet dynamically, and use it to collaborate and accomplish their tasks. Wireless sensor networks (WSN) are well suited for long-term environmental data acquisition for IoT representation. Weather monitoring are made by collecting quantitative data about the current state of the atmosphere on a given place and using scientific understanding of atmospheric processes to project how the atmosphere will evolve on that place.

FISHERMAN BORDER ALERT SYSTEM

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ABSTRACT

Augmenting strains over the ocean fringes brought on much devastation between two nations.Anglers from any nation are being snatched by the naval force for intersection the fringe which is accidental the majority of the circumstances. The viable generation of this framework manages following the area of the watercraft using RSSI, it gives solid arranging route and timing facilities to overall clients on a consistent substructure in all climates, day and night on or proximate to earth and trigger an exhortation message, when the outskirt is drawn nearer or crossed. Withal, in additional organize, the RSSI data is sent to costal sentinel and the celerity of the watercraft motor gets off by the control of fuel supply to motor. Subsequently sentinels in the shore can profit and give supplemental benefit to the anglers and profit them not to move past the outskirt.

REMOTE MONITORING AND AUTOMATION OF INDUSTRIAL MACHINE USING SOFTSWITCH

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ABSTRACT

In this paper, a wireless monitoring system for industrial motor is realized using IoT protocol, where wired communication is either more expensive or impossible due to physical conditions and human hazards for safe and economic data communication in industrial fields. A low cost system for measuring the parameters of industrial motor such as R.P.M, the productivity, motor temperature with IoT protocol connectivity is described in this paper. Moreover the information's are collected and save in the cloud platform. That information's are obtained through the I.P Address and they are used for the online monitoring system. Softswitch is one of the advanced paradigms which ease the case to obtain the switching conditions of machine and their respective timings.

IDENTIFICATION OF FRUIT AND FLOWER DETECTION USING IMAGE PROCESSING

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ABSTRACT

In this paper an automated technique for flower identification that is robust to uncontrolled environments and applicable to different flower species. The existing method relies on an end-to-end residual convolutional neural network (CNN) that represents the state-of-the-art in semantic segmentation. To enhance its sensitivity to flowers, we fine-tune this network using a single dataset of apple flower images. In proposed method refinement to better distinguish between individual flower instances. Without any preprocessing or dataset-specific training, experimental results on images of apple, peach and pear flowers, acquired under different conditions demonstrate the robustness and broad applicability of our method. In this project analysis a digital image processing and analysis techniques for automation of agricultural products and prediction of yields. The proposed analysis image processing techniques include color, size and shape features. This paper analysis new approach flower image segmentation is applying non linear algorithm. The color and texture features have been used in order to work with the sample images of flower diseases.

DEVELOP AN AUTOMATIC COCONUT DEHUSKER AND WASTE PULVERIZER MACHINE

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ABSTRACT:

A coconut is the fruit of a coconut palm belonging to Aceraceae family and it is used by one third of population in the world. The coconut needs to be dehusked before it could be utilized for any of the purpose it serves. The husk of the coconut can be removed by various techniques. Manual dehusking is the conventional process followed widely among farmers. The labour cast incurred and the time consumption can be considerably decreased by increasing the usage of the machine. Another unit of the project is waste pulveriser. This designs to chops the corn straw, sugar cane, coconut leaves and this chopped power to prepare the vermin compost. This project attempts in making a dehusker and waste pulveriser which is affordable and also has high productivity. The dehusker machine has two rotating shafts with spikes. By fixing IR sensor is used to sense the coconut present in the shaft. When the coconut is placed between the spiked shafts rotating in opposite direction, the husk is peeled off from the coconut. Then the shafts rotate by a single-phase AC artificial manure induction motor.

ANALYSIS OF THREE IOT BASED WIRELESS SENSORS FOR ENVIRONMENTAL MONITORING

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ABSTRACT:

The recent changes in climate have increased the importance of environmental monitoring, making it a topical and highly active research area. This field is based on remote sensing and on wireless sensor networks for gathering data about the environment. Recent advancements, such as the vision of the Internet of Things (IoT), the cloud computing model, and cyber-physical systems, provide support for the transmission and management of huge amounts of data regarding the trends observed in environmental parameters. In this context, the current work presents three different IoT-based wireless sensors for environmental and ambient monitoring: one employing User Datagram Protocol (UDP)-based Wi-Fi communication, one communicating through Wi-Fi and Hypertext Transfer Protocol (HTTP), and a third one using Bluetooth Smart. All of the presented systems provide the possibility of recording data at remote locations and of visualizing them from every device with an Internet connection, enabling the monitoring of geographically large areas. The development details of these systems are described, along with the major differences and similarities between them. The feasibility of the three developed systems for implementing monitoring applications, taking into account their energy autonomy, ease of use, solution complexity, and Internet connectivity facility, was analyzed, and revealed that they make good candidates for IoT-based solutions.

IOT BASED MEDICINE BOX FOR MEDICATION MANAGEMENT

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ABSTRACT:

Owing to people's busy schedules and their forgetfulness or loss of memory due to age, many a times they miss their medication dosage meant to be taken at a specific time. Apart from the factor of forgetfulness, sometimes the patients (specifically in the case of elderly and blind people) are unable to read the names written on the medicine packets which may lead to intake of wrong medicines. These factors lead to medication non-adherence which may result in negative consequences for the patient. This is a critical problem for Medical Researchers as it hampers treatment success. This project proposes the design of an automated system which reminds people of their medication schedule and can also take the required medicine at a specific time. This project also provides mechanism to determine the condition of the elderly patients by sensing the one or more vital parameters using sensors such as heart beat sensor and temperature sensor. In the developed system, the time at which patient has taken medicine and the vital parameters readings of the patient measured through sensors can be monitored from the hospital management i.e., from clinical professionals by accessing the database of the patient in the hospital website.

DETECTING ATTACKS IN WIRELESS SENSOR NETWORK

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ABSTRACT :

Nowadays, Wireless Sensor Networks (WSNs) are widely used in many areas, especially in environment applications, military applications, queue tracking, etc. WSNs are vulnerable to different types of security attacks due to various constraints such as broadcasted nature of transmission medium, deployment in open or hostile environment where they are not physically protected, less memory, and limited battery power. So, security system is the crucial requirements of these networks. One of the most notably routing attacks is the sinkhole attack where an adversary captures or insert nodes in the sensor field that advertise high quality routes to the base station. In this paper, a mechanism is proposed against sinkhole attacks which detect malicious nodes using hop counting. The main advantage of the proposed technique is that, a node can detects malicious nodes only collaborating with the neighbor nodes without requiring any negotiation with the base station. Simulation result shows that, the proposed technique successfully detects the sinkhole nodes for large sensor field.

KEYWORDS: *sinkhole attack, wireless sensor network, routing attack, hop distance.*

IMPROVEMENT IN MULTIPLE ACCESS CHANNEL ALLOCATION IN SENSOR NODE

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ABSTRACT:

Mobile Adhoc Networks can be used in many applications, ranging from sensors for environment, health, home, weapons, robots etc. Since the sensor nodes are move into position for military action in a rough field with unpredictable environment conditions the nodes fail mainly due to battery drain. So we can use routing algorithm for finding the best path that consumes lesser energy and it will reduces the delay in the path. We can use Opportunistic routing which exploits the broadcast nature of wireless medium which is not utilized by traditional routing. The important features of Opportunistic routing are selection of forwarding nodes and coordination among the nodes to deliver the packets to their destination. In this type of routing each packet, each hop and the next relay node is found dynamically by selecting the node that captures the packet transmission. Each node maintains a group of next hop nodes called as the forwarder list and next relay node. This routing reduces the size of the forwarder list by including only the nodes that are nearer to destination. It also routes the acknowledgement to balance the energy spend by the nodes.

AUTOMATIC WATER AND PESTICIDE SPRAYING FARMBOT

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ABSTRACT :

Agriculture is one of our most important work for providing food, feed and fuel necessary for our survival. Certainly automation are playing an important role in the field of agriculture for farming process autonomously. Normally, farming process include planting fertilisation, monitoring and harvesting of a crop of any kind. But multi processes are not done by using a machine. The proposed system focuses on implementing water and pesticides spraying process especially on vegetables by using FarmBot. The spraying of pesticides is traditionally done by farmers and due to that, may infections are causing for them. Giving attention to these problems an attempt is made to develop equipment which will be beneficial to the farmer for spraying operation. IT reduces direct contact with the human body injury and improves the efficiency of agriculture spraying operation.

FACE-NAME TRACKING ANALYSING SYSTEM BY CLUSTER USING CONSTRAIN K-MEANS

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ABSTRACT:

Auto face identification of characters in films has drawn most research interests and led to many interesting applications. Since huge variation in the appearance of each character is found, it is a challenging problem. Existing methods evaluates promising results in clean environment, the performances are limited in complex movie scenes due to the noises generated during the face tracking and face clustering process. This study presents two schemes of global face-name matching based framework for robust character identification. The contributions of this study include:

- A noise insensitive character relationship representation is incorporated.
- The study introduces an edit operation based graph matching algorithm.
- Complex character changes are handled by simultaneously graph partition and graph matching.
- Beyond existing character identification approaches, we further perform an in-depth sensitivity analysis by introducing two types of simulated noises.

The proposed schemes demonstrate state-of-the-art performance on movie character identification in various movies. The project has been developed using Visual Studio .Net 2005 as front end and SQL Server 2000 as back end. C# is used the coding language.

SMART BOREWELL OPTIMIZER AND MONITORING SYSTEM TO ENHANCE BOREWELL LIFE

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ABSTRACT:

Inefficient utilization of water in bore wells is leading to the drying of bore wells. When the overhead tank gets emptied, the motor of any of the bore wells is automatically switched ON regardless of the status of the bore well. So, if there is multiple borewell in an apartment, all the borewell will not have same yielding capacity. But as per the current situation, all 3 borewell are operated same time and same quantity of water will be taken out from borewell. So Lesser yield borewell will lose its yielding capacity easily and possible that borewell will shut down earlier. Our proposed project will provide the solution for this project. We will monitor the yielding capacity of all bore wells and based on the yielding capacity borewell can operated. If borewell has high yielding capacity then we can operate it for more time and if borewell has lesser yielding capacity then we can operate it for less time. So that we can able to increase the borewell life and also water conservation can be done.

KEYWORDS: *Water Quality; IOT; Sensors; Quantity testing; Quality testing; cloud storage; android app.*

CONSTRUCTION SAFETY IN HAZARDOUS CONFINED SPACE

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ABSTRACT:

The paper presents the concept of hazardous confined space by identifying hazards in construction areas, with special emphasis on dangerous gases commonly found there, and construction safety measures that involve: testing the air, cleaning and ventilation, separating enclosed spaces, personal protections, entry control, blocking mobile device and rescuing casualties. Since rescue operations in confined spaces are unique hazards, proper training of personnel and the availability of specialized equipment are required to protect persons attempting rescue from injury and death For only 8 years in America, there has been an average of 89% work-related deaths in confined spaces per year, and approximately 23 (25.5%) of those who died were persons attempting rescue. Asphyxiation by gases was the primary cause of death.

KEY WORDS*:Construction Safety, hazardous confined spaces.*

FABRICATION OF TWO WHEELER ENGINE COOLING SYSTEM USING PELTIER PLATES

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ABSTRACT:

The current worldwide trend of increasing transportation is responsible for increasing the use of two wheeler engines .The purpose of this project has been to investigate the possibility of heating and cooling air by connecting peltier plates to system fins. When system runs it will dissipate heat and various toxic gases into atmosphere which causes global warming. At the mean time over heating of system will also affect the performance of the system when it's too hot. In order to reduce toxicity level of exhaust gases and smooth running of system we implement and tested peltier elements to cool the system to certain temperature. If the peltier is implemented on the system it will absorb the flue gas from the system to dissipate the cooled air into the atmosphere. It will increase the performance of the system and also reduces the global warming.

KEYWORDS :*Peltier plates, Thermoeletric cooler, Seeback effect.*

DESIGN AND FABRICATION OF UAV FOR SPRAYING PESTICIDE

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ABSTRACT

Pesticides are mainly used for better crop yields in the agricultural field. In order to avoid man power we can use aircraft and drones for carrying out this operation because of its speed and effectiveness in spraying. By introducing such kind of agricultural automatic and sensing technologies we can able to increase the agricultural productivity. Here we introduce Quad-Copter (QC) which is light weight and low cost. In manual spraying there are some factors that reduces the yield. An automated aerial pesticide sprayer is basically quad-copter with pesticide spraying mechanism is introduced. When compared to manual spraying, large area of field can be covered using quad-copter. In a short span of time. This project will overcome the ill-effect of pesticide on human being by using quad-copter for spraying pesticide by pesticide spraying mechanism.

Paper Id: RTICCT19_47

DATA MINING APPROACH FOR AUTOMATIC DISCOVERING SUCCESS FACTORS RELATIONSHIP STATEMENTS IN FULL TEXT ARTICLES

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***Abstract*:**

The data mining techniques are utilized in the context of Business-to-Business (B2B) for identifying sentences that provide the information regarding success factors and their relationships. In this paper is an applying existing technique, especially data mining to automatically classify relevant sentences describing an influencing relationship between success factors word. On the data extraction part, first step is used to select the optimal data mining workflow for automatic classification of sentences. Using Document clustering frame work, focus on correlations between the documents in the local patches is maximized while the correlations between the documents outside these patches are minimized simultaneously. The existing system unsupervised constraints are automatically derived from a two-sided TF-IDF classification model to represent both document and word constraints. It then used an alternating positive and negative class algorithm to optimize the model. The proposed system adopts both supervised and unsupervised constraints to demonstrate the effectiveness of the proposed algorithm in this framework. The proposed N-Gram algorithm applied for data preprocessing to eliminate duplication and apply semantic similarity between words in the documents. The results of the evaluation demonstrate the superiority of current approach against several existing approaches.

Keywords:

TF-IDF Classification, Clustering, Similarity Measuure, Term Matrix, N-gram

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Paper Id: RTICCT19_37

PRIVACY-PRESERVING SMART SEMANTIC SEARCH BASED ENCRYPTED OUTSOURCED DATA FOR CLOUD COMPUTING

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***Abstract*:**

Searchable encryption is an important research area in cloud computing. However, most existing efficient and reliable cipher text search schemes are based on keywords or shallow semantic parsing, which are not smart enough to meet with users' search intention. Therefore, in this paper, we propose a content-aware search scheme, which can make semantic search smarter. We propose ECSED, a novel semantic search scheme based on the concept hierarchy and the semantic relationship between concepts in the encrypted datasets. ECSED uses two cloud servers. To further improve the search efficiency, we utilize a tree-based index structure to organize all the document index vectors. We employ the multi keyword ranked search over encrypted cloud data as our basic frame to propose two secure schemes. The experiment results based on the real world datasets show that the scheme is more efficient than previous schemes. We also prove that our schemes are secure under the known cipher text model and the known background model. First, we introduce conceptual graphs as a knowledge representation tool. With our systematically designed verification construction, the cloud server cannot know which data owners' data are embedded in the verification data buffer, or how many data owners' verification data are actually used for verification. All the cloud server knows is that, once he behaves dishonestly, he would be discovered with a high probability, and punished seriously once discovered. Furthermore, we propose to optimize the value of parameters used in the construction of the secret verification data buffer. Finally, with thorough analysis and extensive experiments, we confirm the efficacy and efficiency of our proposed schemes.

Keywords:

Cloud computing, secret sharing, Secure outsourcing, Searchable encryption.

Paper Id: RTICCT19_42

EFFECTIVE ANALYSIS OF MEDICAL DATASET USING INFREQUENT CASUAL ASSOCIATION MINING

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***Abstract*:**

The data mining is a process of analyzing a huge data from different perspectives and summarizing it into useful information. Data mining plays a significant role in the field of information technology. The data mining techniques are very useful to make medicinal decisions in curing diseases. The discovered knowledge can be used by the healthcare administrators to improve the quality of service. The mining task that focuses on discovering frequent paramedical from the medical databases is called frequent paramedical mining. Mining infrequent paramedical is a challenging endeavor because there is an enormous number of such medical that can be derived from a given data set. More specifically, the key issues in mining frequent paramedical are: (1) to identify interesting infrequent paramedical patterns (Symptoms and Side Effect) and (2) to efficiently discover them in large paramedical data sets. To get a different perspective on various types of interesting infrequent paramedical, two related symptom are negative action and side effect correlated disease. In this paper, focus on the medical data extraction part, particularly, on the very first step of selecting the optimal data mining workflow for automatic classification of paramedical dataset. Medical record is automatically group related classification using NBC model. In this classification frame work, focuses on correlations between the symptoms in the local area are maximized while the correlations between the side effect these area are minimized simultaneously.

Keywords:

Mining Infrequent Mining, Medical dataset, NBC classification Model.

Paper Id: RTICCT19_025

IDENTITY-BASED AUDITING FOR ELECTRONIC MEDICAL RECORD SYSTEMS WITH CLOUD COMPUTING

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***Abstract*:**

Sharing digital medical records on public cloud storage via mobile devices facilitates patients and doctors to get offer medical treatment of high quality and efficiency. However, challenges such as data privacy protection, flexible data sharing, efficient authority delegation, computation efficiency optimization, are remaining toward achieving practical fine-grained access control in the Electronic Medical Record (EMR) system. In this work, we propose an innovative access control model and a fine-grained data sharing mechanism for EMR, which simultaneously achieves the above-mentioned features and is suitable for resource-constrained mobile devices. In the model, complex computation is outsourced to public cloud servers, leaving almost no complex computation for the private key generator (PKG), sender and receiver. Additionally, the communication cost of the PKG and users is optimized. Moreover, we develop an extensible library called libabe that is compatible with Android devices, and the access control mechanism is actually deployed on realistic environment, including public cloud servers, a laptop and an inexpensive mobile phone with constrained resources. The experimental results indicate that the mechanism is efficient, practical and economical.

Keywords:

Auditing mechanism, attribute based encryption, secure outsourced computation, cloud computing, Electronic Medical Record.

Paper Id: RTICCT19_36

FINDING THE SHORTEST PATHS IN ROAD NETWORKS WITH MINIMUM PAIR

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***Abstract*:**

Finding the shortest path in road networks becomes one of important issues in location based services (LBS). The problem of finding the optimal meeting point for a group of users has also been well studied in existing works. This paper investigates a new problem for two users. Each user has his/her own source and destination. However, whether to meet before going to their destinations is with some uncertainty. The paper models it as minimum path pair (MPP) query, which consists of two pairs of source and destination and a user-specified weight α to balance the two different needs. The result is a pair of paths connecting the two sources and destinations respectively, with minimal overall cost of the two paths and the shortest route between them. To solve MPP queries, it devises an algorithm by enumerating node pairs. An efficient algorithm based on point-to-point shortest path calculation is proposed to further improve query efficiency. It also presents a smart driving direction system IS proposed to model the dynamic traffic pattern so as to provide a user with the fastest route to a destination with edge failure situation.

Keywords:

MMP, MPP, Shortest Path Finding, Point-To-Point Shortest Path.

Paper Id: RTICCT19_33

Internet Traffic Monitoring to Prevent DDoS Attack using Traceback

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***Abstract*:**

This paper proposes an online Internet traffic monitoring system based on Spark Streaming. The system comprises three parts, namely, the collector, messaging system, and stream processor. We considered the TCP performance monitoring as a special usecase of showing how network monitoring can be performed with the proposed system. Typical experiments showed that the system performs well for large Internet traffic measurement and monitoring. In addition, Distributed Denial-of-Service (DDoS) attacks are a critical threat to the Internet. However, the memory less feature of the Internet routing mechanisms makes it extremely hard to traceback to the source of these attacks. As a result, there is no effective and efficient method to deal with this issue so far. In this paper, a novel traceback method for DDoS attacks is proposed that is based on entropy variations between normal and DDoS attack traffic, which is fundamentally different from commonly used packet marking techniques. The proposed strategy is fundamentally different from the existing PPM (probabilistic packet Marking) or DPM (deterministic packet Marking) traceback mechanisms, and it outperforms the available PPM and DPM methods.

Keywords:

Traceback, Internet Traffic, Local Flow Monitoring algorithm.

Paper Id: RTICCT19_024

Prediction of Parkinson's disease Using Data Mining Machine Learning

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***Abstract*:**

The main focus of our project work is to deploy a robotic architecture to avoid direct human being contact inside the drainage system by monitoring the air quality and water quality inside the drainage using a sensorial system. In order to monitor the clog and blockages inside the drainage system, WiFi-based camera is mounted on the robot. Man controlled pick and place robotic arm is equipped in front of the robot to clear the blockages. Air Quality Index (AQI) chart and Water Quality Index (WQI) chart are references in identifying and measuring the air quality and water quality inside the drainage system respectively. Automatic drainage inspection system provides complete eradication of manhole accidents and deaths due to harmful gases and other toxic substances inside the closed drainage system. In addition to the above, it also provides removal of blockages and clogs by the continuous real- time monitoring system and in taking timely action for avoiding the overflow in the drainage system. To validate the proposed system, experiments have been conducted and deploy the robot to the real drainage system and captured the real-time robot performance. The sensorial system provided a precise output.

Keywords:

PD Dataset, PCA Feature Extraction , Data Mining Classification Model, Bayesian Classification.

Paper Id: RTICCT19_22

COST EFFECTIVE RESOURCE PROVISIONING ON CLOUD FOR DATASET USING TOF PLANNER APPROACH

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***Abstract*:**

In this paper shows the Cloud suppliers to give cloud shoppers to two provisioning plans are On-Demand plan and Reservation designs. Since it gives clients an effective method to dispense registering assets are powerfully to satisfy needs. Ordinarily, cost of using figuring assets provisioned by on-request plan is higher than reservation plan. Since reservation plan can give offer of shopper can diminish the all-out asset provisioning cost. It tends to be accomplished in Uncertainty of buyer's future interest and supplier's asset costs. To control the cloud assets adaptively dependent on the reservation system for under over provisioning (RTUOP) calculation. The RTUOP calculation is utilized to multi provisioning phases of long haul plan. The OCRP principally considered in the interest and value vulnerability. The arrangements of the RTUOP calculation are considered including drinking sprees disintegration deterministic identical plan and stochastic whole number programming. To beat this issue to connect by the situation decrease methods (SRT) to lessen the quantity of situations and effectively limit all out expense of asset provisioning in cloud conditions.

Keywords:

Distributed computing, asset provisioning, virtual machine, stochastic programming, and situation decrease method.

Paper Id: RTICCT19_31

BOOSTER IN HIGH DIMENSIONAL DATA CLASSIFICATION

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***Abstract*:**

Classification problems in high dimensional data with a small number of observations are becoming more common especially in microarray data. During the last two decades, lots of efficient classification models and feature selection (FS) algorithms have been proposed for higher prediction accuracies. However, the result of an FS algorithm based on the prediction accuracy will be unstable over the variations in the training set, especially in high dimensional data. This paper proposes a new evaluation measure Q-statistic that incorporates the stability of the selected feature subset in addition to the prediction accuracy. Then, we propose the Booster of an FS algorithm that boosts the value of the Q-statistic of the algorithm applied. Empirical studies based on synthetic data and 14 microarray data sets show that Booster boosts not only the value of the Q-statistic but also the prediction accuracy of the algorithm applied unless the data set is intrinsically difficult to predict with the given algorithm.

ABOUT US

The department was accredited for 2 years by National Board of Accreditation (NBA). With the able guidance of the Principal **Dr.P.Senthilkumar, M.E, Ph.D. (IITM), Head of the Department Dr.N.Shivasankaran, M.E.,Ph.D.,** and an excellent team of 57 faculties, it has produced 3Gold Medals and 22 University Ranks in the examination conducted by ANNA University. An entrepreneur development cell is feeding knowledge to develop confidence to turn students into Employers (Entrepreneurs / Owners). Higher education cell is also functioning in the department to enhance the students to write exams like GRE, TOEFL, IELTS, GATE and CAT to get admissions for higher studies in countries like USA, UK, Australia, Sweden, Germany, Singapore, Italy etc. The student's chapter cell is also functioning in the department, in order to enhance learning and career development. Some of the student's chapters in our department are ISHRAE, SAE and IE.

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Proceedings of International Conference on Sustainable Materials

ICSM 2019

INVESTIGATION AND EVALUATION OF BANANA FIBER REINFORCED POLYMER COMPOSITES

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Now a days the environmental pollution increases in this technology world and everyone is looking to concentrate on the materials that satisfy the environment. We have to prevent the non-renewable and non-biodegradable resources. The natural fibers can provide more advantages than the synthetic reinforcement materials. On comparison with synthetic reinforcement materials, the banana fiber composites are low cost, low density, non toxicity, comparable strength, minimum waste disposal problems. In this experiment, banana fiber reinforced polymer composite are prepared and to improve mechanical properties of these composites they are investigated and evaluated. The samples of composite with different amount of fiber portions were prepared by using hand lay–up process and the pressure will be applied at room temperature. The banana fiber reinforced samples were subjected to the mechanical testing process such as tensile, flexural and impact test. They are used in integrated parts of automobiles. The applications of banana fiber composite on automobiles are reduction of parts, low manufacturing and tooling cost, better integration of parts into other components of automobiles.

EFFECT OF THERMO MECHANICAL TREATMENT ON MICROSTRUCTURE AND HARDNESS BEHAVIOR OF WE43 MAGNESIUM ALLOY WITH TITANIUM

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Due to their high specific strength and low density, magnesium alloys are widely used in light weight applications. This research is aimed at investigating the microstructure and hardness of commercial WE43 alloy specimens subjected to two different thermomechanical treatments (TMTs) with addition of Titanium. This alloy forms new composition with both Magnesium and Titanium properties. However we know that Titanium has excellent mechanical properties which can be used in high performance applications. In our project, Titanium is added to WE43 alloy in order to make the material with less conductive nature and good corrosion to resistance.

MECHANICAL PROPERTY OF PALMYRA FIBER COMPOSITE

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At the present a days composites gains charm due to its lightweight and moderate strength in the recent uses in all industrial areas. Palmyra fiber is a natural fiber obtained from Palmyra (Borassus flabellifer) tree. In the Palmyra fiber Mechanical properties of at random fiber composites are studied and best fiber length and weight percentage are expected. This paper deals with the properties of palmyra fiber, There are Composite plates are prepared for different types of palmyra models. Epoxy resin is use as a matrix Tensile, impact, and bending properties are studied. The mechanical properties of the composites are improved to various types of invention palmyra fiber in the matrix.

INVESTIGATION OF MECHANICAL PROPERTIES OF ALUMINIUM METAL MATRIX

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In the present work, an effort has been made to study about the properties of the composites prepared by reinforcing pure aluminium metal with varying percentage of Coconut Shell Ash and SiC particles. The composites were prepared using stir casting process with bottom pouring at a pre-set melting temperature and stirring speed. The produced composites were then studied for mechanical properties like hardness, density etc. It was noticed from the results, that the inclusion of ash and ceramic particles has a significant influence on the mechanical properties but will make the composites brittle.

MECHANICAL PROPERTIES OF NATURAL FIBERS ON REINFORCED POLYMER MATRIX COMPOSITE MATERIAL

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Natural fiber composites have recently attracted a great deal of attention by the industry due to their many attractive benefits such as low cost, biodegradable, etc. Beneficial properties include; high strength-to-weight ratio and low density .The study focus on the fiber content and fiber dimension of Epoxy composites. Therefore the present work Pine Apple Leaf Fiber (PALF) have chemically modified by silane. Mechanical properties like tensile strength, flexural strength and impact strength have been found out. Natural fibers have more valuable attention from structural engineers all over the world and utilization of natural fibers as reinforcement in polymer composite for making low construction materials has been growing very wide interest.

DEVELOPMENT OF NATURAL FIBRES CEMENT COMPOSITE ROOFING TILES

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In present roofing tiles,they have heavy weight and limited life time with poor indoor climate.Engineers have always been on the lookout for efficient and light roofing tiles which requires minimum maintenance and labour to install. Natural fibre is a green building material and has potential as a raw material for the production of roofing materials like corrugated sheets and tiles. The main objective of this project work is to produce cost effective roofing tiles without compromising their quality by replacing cement up to 15%.In this work there are three different types of natural fibres (Coir,Banana,Sugarcane) are used as a reinforcing agent to the exist cemented roofing tiles.The natural fibre reinforced roofing tiles with different reinforcing agents are prepared and the climatic comfortness & mechanical properties

COMPARISION STUDY OF VARIOUS NANOPARTICLES FOR ITS FIRE-RETARDANT PROPERTY

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Various problems like short circuiting, mishandling of resources, gas stove etc results in Fire. Fire harms the people around it resulting from mild burns to severe problems like death. Wildfire also results in the loss of trees as well as Animals. There is also a huge property loss. It has been reported that a home fire occurs every 88 seconds. Therefore, there is an increasing need to control the disaster caused by the spread of Fire. This project is one step forward to protect the human life from the Fire problems. Nanoparticle has a wide area of application; one such area is Fire-retardant. They naturally have the property of fire-retardancy. Here, SiO2 and Al2O3 are studied as a comparative one to find which has a better Fire-retardant property. The nanoparticle selected are eco-friendly, less or no toxic, low cost and easily available. The SiO2 and Al2O3 shows excellent hydrophobic as well as oleophobic property which is an added advantage. For the application of textile, it is being blended with High-Density Polymer as well as a Low-Density Polymer by Electro spinning method to identify better ones. This is going to be implemented in the fabrics like Cotton to increase its resistance against Fire. The nanoparticle was studied under various characterization techniques like UV visible spectroscopy, X-ray fluroscence (XRF), X-Ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), Contact Angle (CA), Thermo gravimetric analysis (TG-DTA).

EFFICIENCY IMPROVEMENT ON SOLAR CELLS USING ZnO ANTI REFLECTION COATING

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Several researchers had improved the solar cell potency by film-forming techniques such as spin coating, doctor blading and casting process. ZnO Nano particle is synthesized and coated as a thin film over a polycrystalline solar cell. The ZnO layers were found to be an excellent antireflection coating (ARC), exhibiting exceptional light trapping at wavelengths ranging from 400 to 1000 nm because of their lowest effective reflectance. In the current paper, ZnO ARC layers are coated over the thin glass film using dip coating and spin coating process. Due to antireflective property, it increases the efficiency of solar cell to 2% to 5% and offer a promising technique to produce high-efficiency, low-cost solar cells.

EXPERIMENTAL INVESTIGATION OF HYBRID COMPOSITES USING GLASS FIBRE AND RECYCLED POLYESTER

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The composite materials are now replacing the traditional materials, Because of its superior properties such as high tensile strength, low thermal expansion, high strength to weight ratio. The developments of new materials are on the anvil and growing day by day. Polyester composites become more attractive due to their easy recyclment tendency from waste plastic products and the cost of polyester is very low compared to natural fibres. Glass fibre reinforced epoxy composites will be prepared and the mechanical properties of these same will be evaluated. The composite sample with different fibre volume fraction will be prepared by using the hand layup process and apply pressure at room temperature. The sample where subjected to mechanical testing such as Hardness Test, Compression Test and Impact Test respectively.

DYNAMIC ANALYSIS OF CUTTING FORCE IN TURNING STAIN LESS STEEL 304 USING TAGUCHI METHOD

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Machining of metals is the most universal and major stage of manufacturing.It involves forcing of the cutting tool through the excess material of the work-piece, thereby rendering work-piece to a desired shape and size. So, in present modern technology processes, optimization of machining parameters is one of the key necessities. Average roughness is important because it best defines the surface. The Ra value expresses the average of the peaks and valleys of a surface. Values are typically expressed in microinches or micrometer

INVESTIGATION OF MICROSTRCTURE AND MECHANICAL PROPERTIES OF Cu/Al2O3 SURFACE COMPOSITE LAYER PRODUCED BY FRICTION STIR PROCESSING

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In this investigation, Friction stir processing (FSP) was used to fabricate the Cu/Al2O3 copper matrix composites (CMCs) on pure copper plate for surface applications. Aluminium oxide (Al2O3) is a ceramic particle to improve the wear characteristics of copper surface. A rectangular groove was made on the surface of the copper plate to pour the Al2O3 particles. Friction stir processing (Al2O3) was carried out on the copper plate with and without pin. Al2O3 was evenly distributed on the copper surface during friction stir processing (FSP). There was a

DEVELOPMENT AND ANALYSIS OF BIODEGRADABLE POLYVINYL ALCOHOL AND GROUNDNUT SKIN FILLER COMPOSITE BIO FILMS

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Polymers in general and polymer composites in particular find applications in many fields. Butthe synthetic polymers and their composites are posing many environmental problems. Asalmost all synthetic polymers are non-biodegradable, the present trend is shifted towardsdeveloping or identifying biodegradable polymers. Further, the biodegradable polymers possess outstanding biocompatibility. Among the biodegradable polymers, polyvinyl alcohol (PVA) is the matrix system which exhibits good film formation with moderate strength. Using biodegradable PVA as the matrix and the Groundnut skin filler (BSF) in the 5% to 25% wt as the reinforcements of bio films will be prepared. Further the bio films are characterized by FTIRand XRD.

FABRICATION AND TESTING OF NATURAL FIBER REINFORCED EPOXY COMPOSITE WITH EFFECT OF FIBER LOADING

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World is as of now concentrating in alternate material sources that are environment agreeable and bio degradable. The use of composite materials field is dramatically increasing in the field of engineering. Now day's composite materials are used almost in all aspects of industries in the fields like making of aircraft bodies, vehicle parts etc., the materials most attractive properties are high strength- to-weight ratio. On the other hands this materials also have some problems like fracture, cracking and delimitation by applying a load. These fractures play an important role under the tensile, flexural load. The mechanical behavior is assessed. By using natural fiber reinforced impact with the epoxy resin the tensile, flexural test are carried out in the specimen determination of its mechanical properties.

OUR OF CERAMIC COATED STAINLESS STEEL IN AQUEOUS CONDITION

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Stainless steels are used today in a wide range of applications as a result of their combination of high corrosion resistance and good mechanical properties. In marine applications, corrosion resistance

may need further improvement, and surface coatings may be applied for enhanced protection. In this study, AISI 320 stainless steel samples were to be coated with al203-tio2 using thermal spray process. The morphology, composition and corrosion protection has to be investigated using different techniques like optical and electron microscopes. The corrosion protection obtained on AISI 320 stainless steel

SYNTHESIS AND CHARACTERIZATION OF ALUMINIUM 7075-SILICON CARBIDE METAL MATRIX COMPOSITE

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Silicon carbide has gathered widespread attention as a potential reinforcement for aluminum matrix composites (AMCs) to enhance the properties and reduce the cost of production. Aluminum alloy 7075 reinforced with 10 % of silicon carbide particles were prepared by stir casting method. Silicon carbide particles were incorporated into the semisolid aluminum melt. The microstructures of the MMCs were analyzed using scanning micro electron microscopy. The MMCs were characterized with the homogeneous dispersion of silicon carbide particles having clear interface and good bounding to the aluminum matrix. The incorporation of silicon carbide particles improved the micro-hardness and ultimate tensile strength (UTS) of the MMCs.

USING TAGUCHI GREY RELATIONAL ANALYSIS

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The present investigation is to optimize the dry sliding wear performance of AA6063-TiO2 metal matrix composites using Taguchi analysis. The aluminium matrix composites were produced by varying the weight percentage (0, 3, 6 and 9 wt. %) of TiO2 particles reinforced with AA6063 using stir casting route. The SEM micrographs evident the TiO2 reinforcement particles were homogeneously distributed in to the AA6063 matrix. A pin-on-disc apparatus was used to measure the frictional force and the mass loss of the produced composites under dry sliding conditions. The experiments were planned based on Taguchi's L16 orthogonal array using four process parameters such as reinforcement (wt. %), applied load (N), sliding velocity (m/s) and sliding distance (m). Analysis of variance was used to determine the impact of individual parameters on the wear rate and coefficient of friction. The experimental results showed that the reinforcement weight percentage was the most significant factor on the wear rate and coefficient of friction followed by applied load. Finally, the worn out surface of the composites were analyzed by using scanning electron microscopy.

OPTIMIZING DIFFUSION BONDING PARAMETERS IN AA6063-AZ80 MAGNESIUM ALLOY DISSIMILAR JOINTS

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The main difficulty when joining magnesium and aluminum alloys by fusion welding lies in the formation of oxide films and brittle intermetallic in the bond region which affects the integrity of the joints. However, diffusion bonding is a suitable process to join these two materials as no such characteristic defects are produced at the joints. The diffusion bonding process parameters such as bonding temperature, bonding pressure, holding time, and surface roughness of the specimen play a major

EXPERIMENTAL INVESTIGATION OF NATURAL COMPOSITES WITH EPOXY RESIN

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The analysis of the event of composites has been around for many years. But raising issues concerning the worldwide warming, waste generation & amp, management, increasing environmental consciousness, growing pressure on the resources of fossil fuels has the diode to the event of inexperienced composites. Furthermore, there are some natural fibers wherever the properties are often smart in comparison with the artificial fibers that have contributed to the present development. The aim of the work is to develop a polymer composite with powdered Borassus shell and ground nut shells as reinforcements in epoxy resin matrix hybrid natural composite. The composite plates were manufactured using hand layup technique with at the various composition ratios of 60%, 65%, 70%, and 75% resin and 40%, 35%, 30%, and 25% and while the resin and hardener compositions were 10:1 respectively. The fabricated composites to be tested as per ASTM standards for evaluating mechanical properties such as tensile strength, flexural strength, impact strength, hardness test, and water absorption test.

Review on Hybrid Natural fiber Composite Materials properties and its Applications

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Natural fibers is considered as the most important and interesting aspects of their utilization in polymeric materials, because of its superior properties such as high specific strength, low weight, low cost, fairly good mechanical properties, non-abrasive, eco-friendly and bio-degradable characteristics. Natural fibres are a kind of renewable resources, which have been renewed by nature and human ingenuity for so many of years. Applications of nanocomposites offer new technology and business opportunities for several sectors. Also, this paper focused on different properties of natural fibers (such as abaca, banana, bamboo, cotton, coir, hemp, jute, pineapple, sisal etc) and its applications. And this review paper summarized the history of natural fibers and its applications

TWO AXIS HEAD LAMP CONTROL FOUR WHEELER

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The purpose of this project was done to focuses on the design and working based two axis head lamp control for four wheeler for automotive. The highest fatal traffic accident rate occurs on curved roads at night time. In most cases, the late recognition of objects in the traffic zone plays a key role. These facts point to the importance of the role of automotive forward-lighting systems. In order to provide enhanced night time safety measures, this work aims to design and build a headlights by adapting a conventional static headlamp with a very close eye on cost and reliability.

INTELLIGENT ACTIVE SUSPENSION SYSTEM FOR TWO WHEELERS

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A shock absorber is a mechanical device designed to smooth out or (A slight wetness) damp a sudden shock impulse and dissipate kinetic energy. Now the project has mainly concentrated a suitable suspension unit has been designed. The limit sensor is fixed to the front wheel. When the front wheel is jumping, the limit sensor activates the hydraulic pump automatically starts running and activates the hydraulic suspensor which is fitted in the back wheel. In a vehicle, it reduces the effect of traveling over rough ground. Without shock absorbers, the vehicle would have a bouncing ride, as energy is stored in the spring and then released to the vehicle, possibly exceeding the allowed range of suspension movement. Control of excessive suspension movement without shock absorption requires stiffer (higher rate) springs, which would in turn give a harsh ride. Shock absorbers allow the use of soft (lower rate) springs while controlling the rate of suspension movement in response to bumps.

INTELLIGENT BRAKING SYSTEM

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Braking systems of commercial vehicles were always given the highest importance concerning safety issues and in particular active safety.Inappropriate braking of these vehicles may cause heavy accidents due to relatively longer stopping distances and higher energy output of brakes particularly in the case of vehicle combinations.Intelligent Braking System (IBS) introduced in commercial vehicles providing rapid brake response and release for every single wheel therefore ensuring safety.

AUTOMATIC HANDBRAKE RELEASING SYSTEM

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One of the most important safety features in an automobile is brake. A typical automobile consists of two types of brakes, one for retarding the speed of vehicle while it is in movement and other is to grip the vehicle in its place when standing still or parked. The latter is mainly important when the vehicle is parked on slope. It is important to disengage the handbrake before starting the vehicle from take a break place. Due to operative errors the predictable handbrake system remained engaged even when the vehicle was moving due to manual action of the hand lever all the way throughout which the handbrake is operated. This led the brakes to become unproductive and eventually they failed to serve their purpose. To overcome all the restriction of the predictable system we planned the new automatic handbrake engagement and release system. This system uses mechanically operated components using stepper motor and arduino controller. This system operates depending on the positions of the key. When the ignition switch is turned on the handbrake disengages**.**

FABRICATION OF COMPRESSED AIR PRODUCTION USING SPEED BREAKE

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Our project deals with the fabrication of the compressed air production using speed breakers. In this project we are collecting air from the air cylinder and store this energy to the compressor tank as non-conventional method by simply when the vehicle runs over on a speed breaker. Non-conventional energy system is very essential at this time to our nation. Compressed air production using speed breaker needs no fuel input power to produce the output of the air. For this project the conversion of the force energy into air is done with the help of the compressive force of the speed breakers. The control mechanism carries the air cylinder (speed breaker), quick exhaust valve, non-return valve and spring arrangement. The literature review carried out about this project, the components used and the working of our project are explained in detail in the forthcoming sections.

DESIGN OF ELECTROMAGNETIC BRAKING SYSTEM

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In the present work, an effort has been made to study about the electromagnetic braking system that should ensure the safety and comfort of the passenger. An electromagnetic braking structure uses magnetic power and more turn current to attract the brake. In this manner, rotor or circle stops by torque created because of resistance of attractive field. The electromagnetic brakes can be utilized as a bit of business vehicles by controlling the current provided for make the engaging

development. Making a few upgrades in the brakes it can be utilized as a part of vehicles in future.

AUTOMATIC WASTE COLLECTING SYSYTEM AT PUBLIC TRANSPORT

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Now a days, the plastic waste management is the most challenging one for the government. The plastic or polyethylene and plastic paper waste thrown out while travelling in bus or other large public transport vehicle is deposited on the road side and hill station sometimes it may block the drainage system and pollute the land .By implementing the waste collecting system inside buses which reduce such kind of problems. The flat belt conveyer which is operated by means of solar powered electric motor is placed just nearer to the side doors of either side of the bus to collect that kind of wastes and stored in the waste storage tank which is fitted in the bus in particular interval of time. This system is designed to use on all vehicles but this is highly efficient on the vehicles which drove over long distance (more than 100 kms), because the passengers who travels more produces more wastes.

MANUALLY EXPANDABLE STAIR CLIMB TRANSPONDER

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This project deals with the designing and manufacturing of a vehicle, which can climb stair or move along very rough surface. The technical issues in designing of this vehicle are the stability and speed of the vehicle while climbing stairs. However, the steepness of the stairs is also the important concern of this study. The uses of this special vehicle are in the frequent lift of goods such as books for library, medicines for hospital, regular mails for any institutes, or transportation any toxic material for industries and give freedom to the retarded person or paralyzed patients to move anywhere over flat surface as well as stairs.

POWER GENERATION FROM SPEED BREAKERS

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Energy is the primary need for survival of all organisms in the universe. Everything what happens in the surrounding is the expression of flow of energy in one of the forms. But in this fast moving world, population is increasing day by day and the conventional energy sources are lessening. The extensive usage of energy has resulted in an energy crisis over the few years. Therefore to overcome this problem we need to implement the techniques of optimal utilization of conventional sources for conservation of energy. This project includes how to utilize the energy which is wasted when the vehicles passes over a speed breaker. Lots of energy is generated when vehicle passes over it. There are four mechanisms to generate electricity through speed breakers viz., Rack & Pinion mechanism, Crank Shaft mechanism, Roller mechanism and Spring Coal mechanism. We can tap the energy generated and produce power by using the speed breaker as power generating unit. The kinetic energy of the moving vehicles can be converted into mechanical energy of the shaft through rack and pinion mechanism or some other mechanism. Then, this mechanical energy will be converted to electrical energy using generator which will be saved with the use of a battery. Then the stored power is converted to AC with the

help of inverter and supplied to AC loads also. The energy we save during the day light can be used in the night time for lighting street lights. Therefore, by using this arrangement we can save lot of energy which can be used for the fulfilment of future demands.

EXPERIMENTAL STUDY OF HEAT TRANSFER ENHANCEMENT USING CNT/WATER NANOFLUID AS COOLANT IN CAR RADIATOR

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Traditionally forced convection heat transfer in a car radiator is performed to cool circulating fluid which consisted of water or a mixture of water and anti-freezing materials like ethylene glycol (EG). In this paper, the heat transfer performance of pure water and (CNT-water) nanofluid has been compared with their binary mixtures and, their effects on the heat transfer performance of the car radiator have been determined experimentally. Four different concentrations of nanofluid in the range of 0.15–1 vol. % were prepared by the additions nanoparticles into the water as base fluid. Liquid flow rate has been changed in the range of 2–6 litres per minute and the fluid inlet temperature has been changed for all the experiments. The results demonstrate that nanofluids clearly enhance heat transfer compared to their own base fluid. Furthermore, the Nusselt number is found to increase with the increase in the nanoparticle concentration and nanofluid velocity. Meanwhile, application of nanofluid with low concentrations can enhance heat transfer efficiency up to 45% in comparison with pure water**.**

POWER GENERATION USING SPEED BREAKER

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In the present scenario power becomes major need for human life. Due to day-to-day increase in population and lessen of the conventional sources, it becomes necessary that we must depend on non-conventional sources for power generation. The vehicles possess some kinetic energy and it is being wasted. This kinetic energy can be utilized to produce power by using a special arrangement called “POWER HUMP”.

AUTOMATIC SIDE STAND RETRIEVE SYSTEM USING ELECTROMAGNET

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Our project work titled “AUTOMATIC SIDE STAND RETRIEVE SYSTEM USING ELECTROMAGNET” has been conceived having studied the difficulty in standing for any type of two-wheeler vehicle. Our survey for the vehicle in several automobile garages, revealed the facts that mostly some difficult methods were adopted in standing the vehicles in rest.Now the project has mainly concentrated on this difficulty, and hence a suitable hydraulic unit has been designed. Such that the vehicles can be stand in the floor land without application of any impact force.By pressing the button in the dashboard, the solenoid valve activates the electromagnetic cylinder automatically.The fabrication part of it has been considered with almost care for its simplicity and economy, such that In this project, the solenoid valve is used to activate/deactivate the side stand .The valve is ‘ON’ at the time of side stand original position; the electromagnetic cylinder is activated, so that the compressed air goes to the electromagnetic cylinder.Then

thecompressed air passes through the tube, and then pushes the electromagnetic cylinder, so that the stand is changed from movement of the vehicle with the help of solenoid valve arrangement and it will be be accommodated as one of the essential tools on automobile garages.

MULTI WORKING VECHICLE FOR AGRICULTURE PURPOSE

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The spraying is customarily done by labour carrying backpack type sprayer which requires more human effort. The weeding is the generally done with the help of Bulls becomes for small land farmers. Similarly the seed sowing relevance is also done with the help of bulls, which in the at hand age is time consuming and laborious. So to prevail over these above problems a machine is developed which will be beneficial to the farmer for the spraying and weeding operation along with the seed sowing application. A multifunction device will come in handy that can be put to use in different stages of farming as per necessity.

MULTI PURPOSE AGRICULTURAL VEHICLE

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A study has been carried out to develop the multipurpose agricultural vehicle, for performing major operations like Ploughing, seed sowing, leveling, and water spraying. This vehicle can replace the needs of tractors and help the poor farmers to handle the farming work in small areas. If the plowing tools are removed from the vehicle and replace the water tanks with pesticides tanks it can also be used as the pesticide spraying vehicle. The main basis of this vehicle which can perform the operations at the same time. This vehicle can be easily assembled and disassembled by a single person. India is an agriculture-based country in which, 70% of people depend on the outcome of farming. The future profession of this world would be mostly farming, inorder to survive the future world we need food to live."A study has been carried out to develop the multipurpose agricultural vehicle, for performing major operations like Ploughing, seed sowing, leveling,and water spraying. This vehicle can replace the needs of tractors and help the poor farmers to handle the farming work in small areas. If the plowing tools are removed from the vehicle and replace the water tanks with pesticides tanks it can also be used as the pesticide spraying vehicle. The main basis of this vehicle which can perform the operations at the same time. This vehicle can be easily assembled and disassembled by a single person. India is an agriculture-based country in which, 70% of people depend on the outcome of farming. The future profession of this world would be mostly farming, inorder to survive the future world we need food to live.

DESIGN AND ANALYSIS OF WHEELCHAIR WITH SHIFTING TECHNOLOGY FOR DISABLED PERSON

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Mobility of the challenged people or crippled people is a great concern of the society .This project focuses on designing a mobility aid for the physically challenged people to travel from one place to another. Personal mobility means freedom for the physically challenged. One of the best inventions in the medical field that helped both the elderly and the handicapped is the mobility vehicle. The fact that they are no longer depending on someone else to perform daily duties is a big step forward. A large variety of mobility vehicles are available, form which one is to be selected as per requirements. Mobility vehicles are designed based on the usage, i.e. either indoor or outdoor. In this project we are implement shifting technology in wheel chair for disabled person that the person handles the wheel chair. Mainly, the person should move near to motor cycle by own. Then the person will shift from wheel chair to motor cycle or somewhere easily. This proposed technology will present with simple prototype model and analyzed by ANSYS software.

DESIGN OF ELECTROMAGNETIC BRAKING SYSTEM

Nithyanandan D Sakthivel A Sugavanam S Sundar R Suresh kumar P

K.S.R. College of Enginerring,Tiruchengode-637215,TamilNadu,India

In the present work, an effort has been made to study about the electromagnetic braking system that should ensure the safety and comfort of the passenger. An electromagnetic braking structure uses magnetic power and more turn current to attract the brake. In this manner, rotor or circle stops by torque created because of resistance of attractive field. The electromagnetic brakes can be utilized as a bit of business vehicles by controlling the current provided for make the engaging development. Making a few upgrades in the brakes it can be utilized as a part of vehicles in future.

DESIGN AND ANALYSIS OF VOICE CONTROL WHEEL CHAIR

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The main objective of "VOICE CONTROLLED WHEEL CHAIR SYSTEM" project is recommended to control a wheel chair by using speech recognition module. The system is designed to control a wheel chair using the voice of person. The objective of this project is to fascilate the movement of people who are disable or handicapped and elderly people who are not able to move well. The goal of this system will allow certain people to live a life with less dependence on others for their movement as a daily need. Speech recognition technology is a key technology which will provide a new way of human interaction with machine or tools. Therefore the problems that they face can be solved by using speech recognition technology for the movement of wheel chair. This can be realized and optimized with use the smart phone device as an intermediary or interface. In this project interfaces has been designed therefore to develop a program for recognize speech also controls the movement of chair and an application which can handle or manage the graphical commands. This project uses arduino kit Microcontroller circuit and DC motors to

create the movement of wheel chair and Ultrasonic Sensors to detect the hurdles in between wheelchair and the way of direction.

DESIGN AND MANUFACTURING LIGHT WEIGHT NATURAL FIBER AND GLASS FIBER REINFORCED CLC BLOCK ENGINE CASING

Manuneethi Arasu P, Aswin raj K, Edison M, Giri Rakav M,Jai Vignesh B

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Light weight automobile engine are recent task for automobile industry. Even though aluminum material widely used in race cars and higher end cars but the cost plays major drawbacks for applying in commercial cars. In this study trying to bring the solution for replacing engine casing from commercial mild steel to low cost reinforced CLC blocks to withstand high temperature and high compressible property

PNEUMATICALLY OPERATED AUTO PHYSIOTHERAPY FOR STROKE PATIENTS

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Pneumatic robots are essential for material handling in chemical industries where electric or hydraulic robots are unsuitable due to fire hazard. A 3 axes (3 Degrees of Freedom) particulate used pneumatic robotic arm was designed and assembled in this work along with its control system. Pneumatic rods less linear actuator were used as the main drive system for the robotic arm and were controlled by pneumatic 5/3-way proportional directional control valve. The design of the arm for this work implements crank mechanism to convert linear actuation displacement to angular displacement about the joint.

DESIGN & ANALYSIS ON WHEEL WEIGHT SPILLAGE CONTROL

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Wheel weights are important component, when adjusting the balance of the tires which is used in motorcycle, cars and truck wheels. Clip on weights are the industrial standard weight. Weight is different for steel wheels and alloy wheels. The spillage of weight is occurring in wheel balancing line. Wheel balancing machine indicates the imbalance and indicates the weight should be added by the manual labour using hammer to the corresponding weight. There occurs the spillage problem. But 90% of the alloy wheel will not spill down since it is a tape weight. But the normal weight is not that much easier when compared to the alloy weights. Alloy weight can be easily added with the help of pneumatic machine. But it is not in case of steel weight. So the spillage control and a weight separating machine should be done in order to solve this problem.

Design and Development of Oxy-Hydrogen Engine

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Electrolysis utilization is the process in which separation of water as oxygen and hydrogen of two molecules of each is the basic step in the project. The process which is electrochemical began for the separation of water molecules, as a result of introduction of electrical voltage to the solution, which is the combination of the catalyst with distilled water. If the oxy hydrogen generator efficiency is increase to 100% the engine thermal losses would still outweigh for the economic gain from on board oxy hydrogen addition.

POWER GENERATION BY FOOTSTEP USING RACK AND PINION MECHANISM

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The objective of this project is to generate the electric power through the fabrication of foot step arrangement. As our country is a developing country so the renewable energy resources are very important. Now a day's power demand is increased, so this project is used to generate the electrical power in order to compensate the electric power demand. This project is designed with Rack and pinion, chain drives, Dynamo, and battery. In this method, power is generated on both upward and downward motions of the footstep. This arrangement is placed in the crowded area side. We have discussed its various alternate applications with extension.

DESIGN AND ANALYSIS OF MATERIAL HANDELING SYSTEM USING KINEMATIC MECHANISM

Mr.Ponnusamy S, Jagadesh Babu K, Deenadhayalan P, Bharath Kumar S, Ajith V

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In this project work is done by converting rotary motion into reciprocating motion by Double crank mechanism. The main motive behind this project is to replace conventional conveyor systems by fully mechanical highly efficient and low maintenance system. This project mainly focused towards small scale industries to automate the material handling process. This work is solely based on link mechanism and with use of a simple small motor whose rotary motion is converted to reciprocating motion. This will surely reduce the efforts for small scale industries. The need of moving the manufactured components of any industrial plant is one of the basic needs that need to be fulfilled in order to ensure the efficiency of the plant as a whole. There are various prototypes dedicated solely for the in-plant transport of components or totally manufactured final products. But the thing which does not comply with most of the conveyor belt systems is that they are not cost efficient. They require a large amount of capital investment which is not something that is affordable for small scale industries .The advantage of our design is the stop and go motion which provides a time delay for each product. Time delay actually allows the attendant to perform alterations with packaging if there is a need to do so. Conventional system is not equipped with this type of sporadic motion unless they are programmed to stop at a designated stop which again increases the cost. In Industry there has been a serious demand for intermittent movement of packages /products right from the start .The continuous motion is less important than sporadic motion, hence the main firm of the project is to produce a mechanism that delivers this stop and move motion using mechanical linkages .The advantages of this system is that the system has a time delay between moving packages/products, while in conveyor system such actions cannot be performed unless the

programmed module is used to produce intermittent stopping hence this time delay helps in providing value addition for a product.

DESIGN ANALYSIS AND IMPLEMENTATION OF COMPOSITE LEAF SPRING

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The automobile industry has shown increased interested in the replacement of steel spring with natural and artificial fibre and e glass epoxy resin leaf spring due to high strength to weight ratio the aim of this project is to present low-cost fabrication of e glass epoxy resin leaf spring with end joints and also general study on the design by using Creo and ANSYS12.0. A single leaf with variable thickness and width of constant cross-sectional area epoxy resin glass leaf spring with similar mechanical and Geometrical properties of multi leaf spring compared to the steel spring, thecomposite spring has stresses that are much lower, the natural frequency is higher and The spring weight is nearlylower with bonded end joint and with complete eye Bonded end joint unit.

IDENTIFICATION AND TROUBLESHOOTING OF VIBRATION IN ROTATING EQUIPMENTS USING FFT ANALYSER

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Vibration analysis for condition assessment and fault diagnostics has a long history of application to power and mechanical equipment. The interpretation and correlation of this data is often cumbersome, even for the most experienced personnel, and thus automated processing and analysis methods are sometimes sought. As such, statistical features are commonly used to provide a measure of the vibration level that can be compared to a threshold value indicative of failed condition.Many feature vectors have been developed over the years and are well documented in the literature. What is not clear from the literature is the details associated with each feature so that the results are consistent among users. Pre-processing is vaguely stated and terms, such as “residual signal”, are commonly used yet can mean different techniques. An attempt has been made to define these terms, establish the pre-processing need for each feature, and provide the details needed to produce consistent results.

Rejection Reduction in TU Cam Shaft Bearing

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In this paper, the influences of the bearing non-clearance, which is a common fault for machines, to the chatter stability of machining process are examined by using numerical simulation method. The results reveal that the presence of bearing clearance could make the machining process easier to enter the status of chatter instability. In addition, the spectra analysis to vibration signals obtained under the instable machining processes show that the presence of bearing non clearance could introduce more frequency components to the vibration responses but, however, under both the stable and instable machining processes, the generated frequency components will not violate the ideal spectra structures of the

vibration responses of the machining process, which are usually characterized by the tooth passing frequency and its associated higher harmonics for the stable machining process and by the complex coupling of the tooth passing frequency and the chatter frequency for the instable machining process. This implies that, even under the case with bearing clearance fault, the stability of the machining process can still be determined by viewing the frequency spectra of the vibration responses. Moreover, the phenomena of the chatter frequency shift and the generation of more components provide potential ways to detect the bearing clearance in machines.

DESIGNING ANALYSIS AND FABRICATION OF AUTOROLL PUNCHING MACHINE, USING GENEVA MECHANISM

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On the conventional punching machine the time for job setting, marking, punching operation is more. Labour cost is also more. With Geneva based punching machine the time for job setting, marking, punching, labour cost decreases and also less maintenance cost. In this project we are designing and fabricating the prototype of Auto roll punching machine using Geneva mechanism. This project is specially designed for automatic punching in metal sheet. This project is to introduce automation in industries. It is suitable for making mass production of the sheet metal punching

DESIGN AND DEVELOPMENT OF FDM BASED PORTABLE RAPID PROTOTYPING MACHINE

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3D printers require a reliable and robust control system to provide the proper quality for printed parts. The goal of this project was to design and implement the electronic and software controls for the large scale 3D printer. This system was able to run all three print heads as well as color mixing in the central diamond print head. The resulting design for the control system utilized a RUMBA control board running with Repetier-Firmware as the printer firmware. A separate system was designed for the heat beds, which used an Arduino Uno to control a set of relays to maintain the set temperature to the heat beds.

PNEUMATIC PATIENT BED LIFTING SYSTEM

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The main objective of this project is to design, fabricate, and test the device for lifting and transferring patients in an effective and comfortable way for the patient and the caregiver. With increasing demand for efficiency in the healthcare sector, and a growing focus on patient needs, it is easy to neglect the needs of the caregiver. This is a friendly assisting device for the physically challenged

models are compared for back pressure. By comparing the results of two models the decrease in back pressure is found which ensure improvement in volumetric efficiency of the engine.

DESIGN OF MULTI PURPOSE CULTIVATOR

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Crop cultivation requires soil mixed with organic manure and fertilizers, which increases the growth and yield of the crop. The field is made into bund form to increase the flow of the water. All these processes are carried out manually. The aim of the project is to combine cultivating plough (tine), flatter and bund former in single cultivator equipment, which reduces time consumption and furrows with flatter surface in cultivating land. This multipurpose cultivator helps cultivating the crops like groundnut, maize, cotton and sesame. These types of crops are grown in North West of Tamilnadu.

BOAT SYSTEM FOR CLEAN UP AN OIL SPILL IN SEA SHORE USING ARDUINO TECHNOLOGY

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The researchers and oil companies are trying to take some precaution for the problem of oil spill in sea, river or on ground etc. A lot of work concerned by removing the oil from water, there are many advanced tools used for this task. This project presents a boat system that works on the surface of water to help cleaning up marine oil spills using a skimmer as a collecting tool, the aim of this boat system is to surround the oil spill in certain position for fast and easy cleaning and prevent it from spreading wider. Concept of this project is to clean oil spills in seashore and marine. The boat is operated and controlled by laptop and oil spill is cleanup monitoring using wireless camera. For about Five km can enable the periphery. Rising oil dumped in the sea towards the remote mode, the tool does apparent. Oil spills are a very dangerous occurrence for marine ecosystem. It affects the marine life-forms' existence. It gets unnecessarily threaten. The boat can be controlled anywhere by the laptop. The pictures can be run by wireless camera. Five km can enable the periphery. We further use isolating device fitted to the tube, through which the oil can be carried. Through this mechanism 90 percentage of the oil can be separated. The advantages of this project is, it avoids human labour, clean up about 90% of oil in the seashore, cost is lower than the existing system, Human being are not affected by this work. This Project is eco-friendly.

DESIGN AND ANALYSIS OF HELICAL SPRING USING COMPOSITE MATERIALS

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Helical springs are one of the oldest suspension components they are still frequently used, especially in two wheeler vehicles. The old literature survey shows that helical springs are designed as generalized force elements where the position, velocity and orientation of the mounting gives the reaction forces in the fork attachment positions. Another part has to be focused, is the automobile industry has shown increased interest in the replacement of steel spring with composite helical spring due to high strength to flexible ratio. Therefore, analysis of the composite material becomes equally important to study the

PNEUMATIC AUTO FEED DRILLING MACHINE WITH ACCIDENT AVOIDING SETUP

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In small-scale industries and automatic maintenance shpes, there are frequent needs of tightening and loosening in screws, drilling, boring, grinding machine. Huge and complicated designed parts cannot be machined in ordinary machine.FUther for every operation separate machine is required. The increases the initial cost required, large area requirement and large number of machine are required. In a single machine all the above specified operation can be carried out, after drilling, the drill head is removed from the barrel key and the required tools like grinding application of pneumatics, the pneumatic Cylinder with is operated by an air compressor will give the successive action to operate this machine. By this we can achieve our industrial requirements.

ALTERNATOR OF SAND SIEVING MACHINE

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The sieved sand has its vast participation in the construction of buildings. To sieve the sand the manual work has to be done more but the energy of the human beings drains out when it reaches more than the calories they had. Under the hot sun it drains out and makes even more worsen. To make things ease, Engineers invented a sieving machine that works with the horizontal reciprocating motion mechanism. Even though it was a great invention, it gave many issues. So to overcome those issues we made certain modifications in that and that's what our project is about.

SMART SOLAR GRASS CUTTER

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Good time to mow lawns is when the grasses are about 3 ½ inches. Small area of grass cut off requires less human effort but what if when it comes to a vast area? The present lawn movers lacks in the convenience and it is not feasible in working. The noise pollution and air pollution devastate the environment. The motor equipped engine has to be maintained for its proper working. Our project puts an end to the above discussed problems. The smart intelligence makes the lawn mower to move automatically without the human assistance and it also steers itself away from the obstacles. The power source is the energy from the sun that is collected in by the solar panel and send to the battery. The micro-controller does the main role in our project. This makes our lawn mower, an eco-friendly one.

DESIGN AND FABRICATION OF SLANDING THIRD WHEEL SUPPORT FOR TWO WHEELER

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Bicycles are a common form of exercise, recreation and transportation used by billions. They can also serve to provide physical therapy, as they are a low impact form of exercise that can train balance, strength, stamina and coordination. Though one may consider riding a bicycle to be a fairly simple task, this is not the case for many people. This includes young children, adults who have never learned to ride a bicycle, injured people, or people suffering from developmental or cognitive disabilities. A system that could provide balancing assistance to a bicycle rider without otherwise affecting the experience of riding a bicycle could provide great benefit to these groups of individuals. Such a system could be used both as a teaching tool, and as a physically therapeutic device. In fast moving world the two wheeler is essential for running a life. The lot of people dies at the accidents, after analysis the accidents are happened in balancing driving, especially the long turning area like hills, highway turner. For preventing these accidents the third wheel is support's the vehicle. This concept is done by the combination of electronics and mechanical allies "Mechatronics" using embedded system.

DESIGN AND FABRICATION OF PADDY HARVESTER

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Our project work will mainly focus on small scale farmers having insufficient man power to harvest their fields. In this type of occasion we use the paddy harvester instead of requiring high man power with the ease of operating mechanism. It consists of a diesel engine which is the power unit for this process. This power is transmitted through belt mechanism to the wheel and to the cutter blades for the motion of machine and the cutting operation. It not only performs cutting but also performs harvesting and separation. It is less in cost and considers different factors such as ease of operation, time of operation, and climatic conditions

FABRICATION OF AIR BREAKING SYSTEM USING EXHAUST GAS

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The aim is to design and to develop an air break system based on exhaust gas is called "fabrication of air breaking system using exhaust gas". the main of this project is to reduce the workloads of the engine drive to operate the air compressor, because here the compressor is not operated by engine drive. Here we are placing a turbine in the path of the exhaust from engine. The turbine is connected to dynamo to

generate power. The atmospheric air is stored in air compressor. The air tank supplies the compressed pneumatic power to pneumatic actuator through solenoid valve to apply break.

ACCIDENT AVOIDING SYSTEM FOR PUNCHING MACHINE

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The aim of our project is to take a system-wide approach to preventing the machine accident. The system includes not just the machine and the operator, but rather, it includes everything from the initial design of the machine to the training of everyone that is responsible for any aspect of it, to the documentation of all changes, to regular safety audits and a finally corporate culture of safety-first Design is the part of a machine's life where the greatest impact can be made in relation to avoiding accidents. The designer should ensure that the machine is safe to set up and operate, safe to install, safe to maintain, safe to repair, and safe code commission.

DESIGN AND FABRICATION OF MANUALLY OPERATED DISC PLOUGHING MACHINE

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Ploughing machine used in agriculture fields are tractors and engine operated ploughing machines, they are costly. Due to this economic condition poor peoples are unable to purchase tractors and other costly equipments. To overcome these difficulties our idea is to make manually operated ploughing Machine with use of disk plates. Our idea is to fabricate a ploughing machine where less depth of plough is needed.

PROCESS PARAMETER AND OPTIMIZATION OF T91 MATERIAL IN ORBITAL TIG WELDING MACHINE

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This paper highTlights the optimization of Orbital Tungsten Inert Gas (OTIG) welding process parameter by Design of Experiments (DOE) using Taguchi method .This proposed methodology identifies the optimum parameters for welding and brings out the significance of the individual parameter, combination of any of the two parameters (interaction effect) using Taguchi method by linear model analysis of Signal to Noise (SN) ratio and means various input parameters.Detailed experiments were carried out and optimum parameters are arrived. Further these are tested by different methods to evaluate the strength required for intended application. This ensures sound and reliable weld joint. The optimum levels of these parameters thus developed are being followed and no call for any rework is reported thereafter. By varying the input parameters (current, RPM, gap between the electrode and the job).The weld specimen quality was verified in accordance with the user's quality standards and found satisfactory. This approach is easy to develop and easy to use that assures the best combination of parameters required for Orbital TIG welding which yield strong and defect free weld joints..

EFFECT OF TIG WELDING PROCESS PARAMETERS OF SS316L AND DSS2205 ON MECHANICAL PROPERTIES

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Gas Tungsten Arc Welding (GTAW) process is an arc based welding process that uses the arc between a non-consumable tungsten electrode and a work piece with the help of a shielding gas. The TIG welding is used to produce high quality welds and is one of the most popular technologies for welding in manufacturing industries .The purpose of this work is to study the effect of process parameters such as welding current, welding voltage, electrode diameter and welding speed of Tungsten Inert Gas (TIG) welding on hardness, tensile strength, impact strength and distortion of SS316L and DSS 2205 dissimilar weldments. The results of present work indicate that welding parameters have significant influence on impact strength, hardness, tensile strength and distortion.

FABRICATION OF PNEUMATIC SLOTTING MACHINE

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The main objective of this paper is to improved version of a mini pneumatic Slotting machine which will be more efficient for die makers and pattern makers. This machine is pneumatic powered which has low co-efficient of friction. A pneumatic cylinder has fixed at the top of machine which provides power of slotting operations. Compressed air is passed into the power for contribution the work metal. This paper aims at saving initial cost by providing pneumatic Cylinder for power. It needs only less maintenance cost since less matting parts. This is a pneumatic powered machine and requires no other means of power to drive the slotting machine. This machine executes the slots in the job which enables the machine to do its work automatically to which it increases the production rate.

FABRICATION OF SEED SOWING MACHINE

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Sowing machine should be suitable to all farms,all types of corps, robust construction, also is should bereliable, this is basic requirement of sowing machine. Thuswe madesowingmachine which is operated manually butreduces the efforts of farmers thus increasing the efficiencyof planting also reduces the problem encountered in manualplanting. For this machine we can plant different types anddifferent sizes of seeds also we can vary the space betweentwo seeds while planting. This also increasedthe planting efficiency and accuracy. We madeit from raw materialsthus it was so cheap and very usable for small scale farmers.For effective handling of the machine by any farmer or by any untrainedworker we simplified its design. Also itsadjusting and maintenance method also simplified.

DESIGN AND FABRICATION OF INTELLIGENT RAILWAY GATE CONTROL

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The objective of this paper is to provide an automatic railway gate at a level crossing replacing the gates operated by the gatekeeper. The system reduces the time for which the gate remains closed.This type of gates can be employed in an unmanned level crossing where the chances of accidents are higher and reliable operation is required.Since, the operation is automatic, error due to manual operation is prevented. The system works on a microcontroller based control.The proposed system uses ATmega 328 microcontroller with the help of IR sensors. The arrival and leaving of the system is monitored and the gate is operated accordingly.This paper deals with a topic of much contemporary relevance. It proposes a unique and economical method for improving the safety of our level crossings. Road accidents at railway gate is a leading cause of death and injury worldwide.Surveys conducted by Indian Railway found that about 17% of total railway accidents in India is crossing accidents of which majority occurs at passive railway crossings.

DESIGN AND FABRICATION OF SOLAR PANEL WITH 360° ANGLE OF ROTATION

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The light from the sun is a non-vanishing renewable source of energy. Which is free from environmental pollution. The fabrication of solar cells (which uses the ever existing solar radiation to produce power) has passed through a large number of improvement steps from one generation to another Because of the high solar-to-power conversion efficiency and simple fabrication techniques. We further improve the efficiency by rotating the solar panel facing towards the direction of sun with 360° angle of rotation with the help of stepper motor

DESIGN AND FABRICATION OF POWER OPERATED MULTI NUT TIGHTER AND REMOVER

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The aim of the project is to design and fabricate Multi nut tighter and remover tool for tightening and removing of four nuts of the wheel with DC motor. As the standard of living in India has increased, most of the families have atleast one automotive, car to move quickly and easily without any struggles in changing of wheels.It has been basic need of today's world. Cars can be provided along with Multinut tighter and remover for replacement of tyre easily.This Remover is designed for

commercial and domestic use as well. It is easily used, maintained, stored, easy handle and can remove all nuts at the same time.

AUTOMATIC WASTE COLLECTING SYSYTEM AT PUBLIC TRANSPORT

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Now a days, the plastic waste management is the most challenging one for the government. The plastic or polyethylene and plastic paper waste thrown out while travelling in bus or other large public transport vehicle is deposited on the road side and hill station sometimes it may block the drainage system and pollute the land .By implementing the waste collecting system inside buses which reduce such kind of problems. The flat belt conveyer which is operated by means of solar powered electric motor is placed just nearer to the side doors of either side of the bus to collect that kind of wastes and stored in the waste storage tank which is fitted in the bus in particular interval of time. This system is designed to use on all vehicles but this is highly efficient on the vehicles which drove over long distance (more than 100 kms), because the passengers who travels more produces more wastes.

FABRICATION OF HELMET BASED SAFETY IGNITION SYSTEM

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In present time many cases of bike accident can be seen around us. People get injured or might be dead and one of the main reasons being not wearing helmet. Many people could have saved their life in accident cases if they would have worn helmet at the time of accident. Even though many public awareness programmers are undertaken by government, road rules are violated continuously. So as to overcome these problems, a Smart helmet is proposed having a control system built inside a helmet. Smart Helmet for Motorcyclist is a project undertaken to decrease the risk of death due to head injuries during accidents. The project is expected to improve safety and reduce accidents, especially fatal to the motorcyclist

PERFORMANCE OF WELDING CHARACTERISTIC IN ALUMINIUM ALLOY 5052 USING GAS TUNGESTON ARC WELDING

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In this experimental work, aluminum alloy (5052) elements were made using Gas Metal Arc Welding (GMAW)with pulsed current and non- pulsed current at different frequencies 2Hz, 4Hz, 6Hz. Non-destructive tests like radiography, liquid penetrate test were conducted, evaluated and compared with pulsed and non-pulsed current welding at different frequencies of thickness materials (2mm of 5052 aluminum alloy). The aim of this experimental work is to see the effect of pulsed current on the quality of elements. The experimental results pertaining to different

welding parameters for the above material using pulsed and non-pulsed current GMAW are discussed and compared.

DESIGN AND FABRICATION OF BANANA LEAF CUTTER MACHINE

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Banana leaf cutting machine is one of the simplest machine cuts banana leaf in needed size. The banana leaf cutting machine has complex mechanism and bulk size. The main peculiarity machine in its simplicity, reduced size, weight and also reduces floor space. Project can be directly implemented to paper cutting & rewinding machines in paper mills by using desired cutting tools.

DESIGN AND FABRICATION OF THREE WAY CATALYTIC CONVERTER USING POTASSIUM HYDROXIDE

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Diesel engines have high thermal efficiency, durability and reliability together with their low – operating cost. These chief features make them the most preferred engines particularly for heavy – duty vehicles. Even though the diesel engines give more benefits, the human discomforts caused by the pollutant emission of these engines are substantial. The major constituents of diesel exhaust include carbon monoxide (CO), hydrocarbons (HC), oxides of nitrogen (NOX), and particulate matter (PM) are present in smaller but environmentally significant quantities. In order to reduce these exhaust pollution emissions, Catalytic Convertor is used. It converts the detrimental exhaust gases into less harm gases through the chemical reactions like Oxidation and Reduction process. But unfortunately, the emission of Carbon dioxide (CO2) cannot be controlled by the Catalytic Convertor. The efficiency of Potassium Hydroxide (KOH) can be expected to increase by using it in solid form to pellet form. The Potassium Hydroxide reacts with the exhaust gas from the catalytic convertor and absorbs the CO2. Moreover, the solid catalyst used in the convertor is cost valuable with minimum emission of major pollutants.

FABRICATION OF SWING MOTION POWER GENERATION

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Energy need of the word is growing day by day because of consumption of energy at a larger extent with the population growth. This paper is about generating power by using a swing in such a way that when it stored in a battery. The construction is such a way that, the swinging action makes the horizontal beam rotating through an angle. This shaft is connected to a sprocket to transfer the motion to the free wheel which rotates proportionally with respect to the angle of motion of the swing. The angular movement is converted into a complete rotation with the help of a chain drive connecting both sprocket and free wheel.

The free wheel is connected to a shaft which in turn rotates the spur gear and dynamo arrangement to generate electricity.

FABRICATION AND ANALYSIS OF NATURAL COCONUT FIBER

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While scrutinizing the development of world it's astounding and breathe taking one but this leads to warming and depletion of natural resources and this made boffins to cynosure more on the optimization of naturally available fibres such as coir, sisal, jute etc. This has resulted in creation of more awareness about the use of natural fibres based materials mainly composites.The inexhaustable availability of natural fibre in India gave heed on composite materials and their values. Reinforcement with natural fibre in composites has recently gained attention due to low cost, easy availability, low density, enhanced energy recovery, C02 neutrality, Eco-friendly and recyclable in nature. Although glass and other synthetic fibre-reinforced plastics possess high specific strength, their fields of application are very limited because of their inherent higher cost of production. In this connection, an investigation has been carried out to make use of coir; a natural fibre abundantly available in India

DESIGN AND FABRICATION OF MANUAL STANDING WHEELCHAIR

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The design and fabrication of compact wheelchair for physical challenged person designed to go anywhere. It is inevitable for any country to have people with disabilities or have trouble with standing up, especially arthritis patients. The most common used devices for disabled people are wheelchairs. What's more, the life quality of disabled people and patients has caught attention by society. Modernised wheelchair has become a popular engineering challenge for decades. We aim to design a new mechanical system in wheelchair to help people stand-up, this mechanism should be safer, simpler in structure, less power consuming and more economy

MULTI WORKING VECHICLE FOR AGRICULTURE PURPOSE

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The spraying is customarily done by labour carrying backpack type sprayer which requires more human effort. The weeding is the generally done with the help of Bulls becomes for small land farmers. Similarly the seed sowing relevance is also done with the help of bulls, which in the at hand age is time consuming and laborious. So to prevail over these above problems a machine is developed which will be beneficial to the farmer for the spraying and weeding operation along with the seed sowing application. A multifunction device will come in handy that can be put to use in different stages of farming as per necessity

FABRICATION OF ONE ARM PNEUMATIC EXOSKELETON

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The future of technology lies significantly in the field of R&D with extensive research and the desire to obtain abilities beyond the human capability, the concept of the attribution of human characteristics equipment came into being. The thirst for impossible power was quenched by the development of the "Human Exoskeleton." A Human Exoskeleton is a wearable mobile machine that can be powered by a system of motors, pneumatics, levers, or hydraulics that amplifies the force of the operator. With the raising of this advanced technology, the term 'weakness' can be eliminated from the human perception. This project aims to give authority the physically weak individuals by helping them harness the power of pneumatic to amplify the strength of their arm. Exoskeleton is evolving as leading tools for improving physical disabled performance which is assisting human portability and restoring lost limb activity. The human, who use the exoskeleton, they will no longer feel any fatigue in carrying heavy loads for long periods of time. Its efficiently reduce the muscle effort of an individual, while lifting loads up to twenty kilograms. The exoskeleton arm is a sub assembly of an entire portable suit, and it permits the transfer of external loads to the stronger sections of the body by means of accurately placed linkages and joints. The arm is intended to be an auxiliary source of strength for any people willing to exercise themselves back to fitness or just perform domestic tasks.

FABRICATION OF MULTIPLE MODE STEERING SYSTEM

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In this project we have fabricated the four wheel steering with three mode operation. the main aim of this project is to steer the vehicle according to the requirement. the four wheel steering is more required in critical roads and in desert roads. in this project we implement three steering modes in a single vehicle and the modes can be changed as needed

DESIGN AND FABRICATION OF SQUARE HOLE DRILLING MACHINE

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The mechanical design and of a square hole producing tool based on Reuleaux Triangle. The main aim of our paper is to investigate how the circular motion can be converted into a square motion by purely a mechanical linkages; an application of which is to construct a special tool that drills exact square holes. The geometrical construction that fulfils the laid objective is ReuleauxTriangle . Additionally, for this geometry to work like a rotating drive (such as a drill press) must force the Reuleaux triangle to rotate inside a square, and that requires a square guide to constrain the Reuleaux triangle as well as a special coupling to describe the fact that the center of rotation also in moves within in the constrain. The practical importance of this enhancement is that the driving end can be placed in a standard drill press; the other

GEARLESS TRANSMISSION USING GRINDING MACHINE

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Here is a wonderful mechanism that carries force through a 90ºbend. Translating the rotational motion around an axis, usually involves gears, which can quickly become complicated, inflexible and clumsy-looking, often ugly. So, instead of using gears, this technology elegantly converts rotational motion using a set of cylindrical bars, bent to 90º, in a clever, simple and smooth process that translates strong rotational force even in restricted spaces

DESIGN AND FABRICATION OF DRILING FIXTURE FOR JET BROACHING MACHINE

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Broaching is a machining process that uses a toothed tool called a broach to remove material; there are two main types of broaching linear and rotary. In rotary broaching machine the broach is rotated and pressed into the work piece to cut on axisymmetric shape. In our project we use Jet Broaching Machine to drill holes in a column. In Boiler Auxiliaries Plant the jet broaching machine is usually carried by two personals which increase the setting time, operating cost and labour cost, So to overcome this problem we have designed a fixture which reduces all the costs and reduces the manpower requirement.

WORK AT HEIGHT HAZARD IN CEMENT INDUSTRY

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Work at height is a work in any place, including a place at, above or below ground level, where a person could be injured if they fell from that place. Access and egress to a place of work can also be work at height. The outcome of the incident while working at height is Fall from height. A fall is defined as an event which results in a person coming to rest inadvertently on the ground or floor or other lower level. Fall-related injuries may be fatal or non-fatal. Falls are the second leading cause of accidental or unintentional injury deaths worldwide.Each year an estimated 6,46,000 individuals die from falls globally of which over 80% are in low- and middle-income countries.Prevention strategies should emphasize education, training, creating safer environments, prioritizing fall-related research and establishing effective policies to reduce risk. In this project work, we want to analyse the major causes of incidents happened for the past three years to know the status of Work at height (Fall) hazard in the Cement

Industry. Based on the study outcome, we provide Engineering control measures to control or reduce the fall hazard and to make safe working environment for the people who are all working at height.

RISK ASSESSMENT BY USING HIERARCHY OF CONTROL IN GRAPHITE INDUSTRY

Vasanthasekaran G and Dr Balan A V

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Hierarchy of hazard control is a system used in industry to minimize or eliminate exposure to Hazards. It is a widely accepted system promoted by numerous safety organizations. This concept is taught to managers in industry, to be promoted as standard practice in the workplace. The hierarchy of control creates a systematic approach to manage safety in your workplace by providing a structure to select the most effective control measures to eliminate or reduce the risk of certain hazards that have been identified as being caused by the operations of the business. The hierarchy of control has five levels of control measures, the most effective measure is at the top of the hierarchy and the least effective is at the bottom. So the idea is that to start from the top of the hierarchy in choosing your control measure, and work your way downThis project work covers the Identification of significant hazard in the work place and providing control measures for significant hazards by considering the hierarchy of control method. This will reduce the risk and create safe working environment.

Risk Assessment and Safe Handling Practices while using Asbestos in Industries

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Asbestos is the name given to a group of mineral fibres that was widely used as a building material prior to 1990's in a variety of products due to excellent strength, insulation and fire resistant properties. The chrysotile fibre is also known as "White Asbestos" is used in the manufacturing of asbestos cement roof sheets and asbestos fibre cement sheets. The principal concerns are the development of Asbestosis, Lung cancer, Pleural thickening and mesothelioma. These diseases have long latency periods, in the order of 10-50 years. These can be controlled and prevented in a minimum level by adopting the Indian Standards.

COMPREHENSIVE STUDY OF AIR POLLUTION IN URBAN AND RURAL AREA

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Air pollution has emerged as one of the challenging problems before mankind in the past few decades. In this study we are going to study the effects of air pollution in urban and rural area. By collecting pollution data from the pollution control board. Air pollution is defined as the introduction of particulates, biological molecules, or other harmful materials into the Earth's atmosphere, possibly that cause disease, death to humans, damage to food crops, or the natural or built environment. AQI is

represented as numeric value varies from 0 to 500. If score is 0, it is the best air quality and if score is 500, it is the worst air quality. There are six AQI categories, namely Good, Satisfactory, Moderate, Poor, Very Poor, and Severe. Each of these categories is decided based on ambient concentration values of air pollutants and their likely health impacts.

AUTOMATIC SIDE STAND RETRIEVE SYSTEM USING ELECTROMAGNET

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Our project work titled "AUTOMATIC SIDE STAND RETRIEVE SYSTEM USING ELECTROMAGNET**"** has been conceived having studied the difficulty in standing for any type of two-wheeler vehicle. Our survey for the vehicle in several automobile garages, revealed the facts that mostly some difficult methods were adopted in standing the vehicles in rest.Now the project has mainly concentrated on this difficulty, and hence a suitable hydraulic unit has been designed. Such that the vehicles can be stand in the floor land without application of any impact force.By pressing the button in the dashboard, the solenoid valve activates the electromagnetic cylinder automatically.The fabrication part of it has been considered with almost care for its simplicity and economy, such that In this project, the solenoid valve is used to activate/deactivate the side stand .The valve is 'ON' at the time of side stand original position; the electromagnetic cylinder is activated, so that the compressed air goes to the electromagnetic cylinder.Then thecompressed air passes through the tube, and then pushes the electromagnetic cylinder, so that the stand is changed from movement of the vehicle with the help of solenoid valve arrangement and it will be be accommodated as one of the essential tools on automobile garages.

FEA AND WEAR RATE ANALYSIS OF NANO COATED HSS TOOLS FOR INDUSTRIAL APPLICATION

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The Machinability of a material can be assessed using many output parameters of the machining process, tool life being undoubtedly the most common. Tool life depends mainly on the tool wear rate, which in turn is very dependent on the prevailing wear mechanisms. Here we are planning to do our project work on machining tool (HSS) to improve its performance. The HSS tool is Nano coated with materials of Zirconia and Chromium. The material strength and wear rate of proposed HSS tool is analyzed by using FEA method (ANSYS software). By proposing this Nano coated tools results to improve the machining tool life. Also we can suggest the best and advanced tool for machining process through this present project work.

DESIGN AND FABRICATION OF INDUSTRIAL SAFETY HELMETUSING NATURAL FIBRE REINFORCED POLYMER WITH MODIFIED EPOXY

Shariha R, Naveen Raj S, Selva Kumar R, Sudharsanakrishna M, Vivek U

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Composite materials with thermoplastic matrices and a reinforcement of natural fibres are increasingly regarded as an alternative to material replacement for various applications. The substitution of the traditionally used composite of natural fibres such as coconut, banana and flax can lead to a reduction of the component's weight and furthermore to a significant improvement of specific properties like impact strength, compression strength. One of the major fields of application for such materials can be found in structural components manufacturing of construction helmets. In this project work natural fibre particle

The home server gathers the energy consumption and generation data, analyzes them for energy estimation, and controls the home energy use schedule to minimize the energy cost.

Artificial Neural Network to Improving Energy Efficient in Wireless Sensor Network

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Compressive knowledge gathering (CDG) supported compressed sensing (CS) theory for wireless sensor networks (WSNs) greatly reduces the quantity of information transmitted compared with the standard acquisition methodology that every node forwards the collected knowledge on to successive node. CDG combined with sparse random projection will any scale back the quantity of information and therefore prolong the life of the WSN. The method of every which way choosing projection nodes as ANN based Cluster heads to gather the weighted add of device nodes outperforms the non-CS and hybrid-CS schemes in decreasing the communication price and distributing the energy consumption hundreds. However, the random choice of projection nodes causes the energy consumption of the network to be unstable and unbalanced. During this system, we have a tendency to propose 2 compressive knowledge gathering strategies of balanced projection nodes. For WSN with uniform distribution of nodes, a fair ANN based Cluster methodology supported spatial locations is projected to distribute the projection nodes equally and balance the network energy consumption. For WSN with erratically distributed nodes, a fair ANN based Cluster methodology supported node density is projected, taking into consideration the placement and density of nodes along, equalization the network energy and prolonging the network life. The simulation results show that compared with the random projection node methodology and the stochastic process methodology, our projected strategies have higher network property and a lot of considerably increased over all network life.

ANALYSING AND REDUCING THE LOSSES OF HYDRAULIC OIL BY APPLYING IoT & COUPLER UNIT

Venkateshwaran K Aravinth M Baranidharan K Sasidharan M Vijayakumar M

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Major issues faced by the company is oil leaks especially in pressure die casting machines. Therefore, we took various methods and ideas to reduce the oil consumption in the machines. Then after we bring out IoT concept for monitoring the oil level and coupler mechanism in oil hoses to arrest the oil leak during die change. The oil monitoring are done by installing various electronic units in oil sump and control system are connected to cloud service. This cloud service may help in giving alert to respective person through mail and mobile via

SMS and the data are collected as graphical representation and logical calculations. This technology may help in accurate monitoring real time oil consumption and level. This will result in avoiding leakages and unwanted consuming oil during cycle operation

DETECTION OF HUMAN BODY WITH THE COMBINATION OF PIR [PASSIVE INFRARED] MOTION SENSOR DETECTOR AND THERMAL SENSOR

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Ramesh kumar S
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APassive Infrared Radiation (PIR) based security system which saves the power consumption and the memory space of the recording system has been proposed. The PIR sensor detects the change in infrared radiation of warm blooded moving object in its detection range.In this project we have planned to improve the security features with the help of Micro Electro-Mechanical System. Thermal Sensor(D6t), to detect human intruders.(MEMS) Thermal Sensors are super-sensitive infrared temperature sensors that make full use of sensing technology.Unlike typical pyroelectric human presence sensors that rely on motion detection, the D6t thermal sensor is able to detect the presence of stationary humans by detecting body heat.

REALTIME WATER PURIFIER USING THE UV LED WITH THE HELP OF GRAVITATIONAL KINETIC ENERGY

Sureshkumar T, Nandhakumar P, Naveenkumar M, Sabarinathan V, Sai Surya VP.
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The amount of fresh water supply available is very low and has been reducing constantly over time. Hence various methods to purify and consume the water resources have been introduced and employed widely. Based on the purification of water the energy requirements for filtering become higher and thereby the cost. Most of the water resources for human consumption are stored at a pressure head which has some unutilized energy wasted every time. This method thereby employs mechanisms for converting stored potential energy of water to supply the electronic water filter systems like UV, RO, etc,.

BOAT SYSTEM FOR CLEAN UP AN OIL SPILL IN SEA SHORE USING ARDUINO TECHNOLOGY

Vignesh C, Yogesh Waran S, Subash S, Saravanan K, Dr. Gopalakrishnan S

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The researchers and oil companies are trying to take some precaution for the problem of oil spill in sea, river or on ground etc. A lot of work concerned by removing the oil from water, there are many advanced tools used for this task. This project presents a boat system that works on the surface of water to help cleaning up marine oil spills using a skimmer as a collecting tool, the aim of this boat system is to surround the oil spill in certain position for fast and easy cleaning and prevent it from spreading wider. Concept of this project is to clean oil spills in seashore and marine. The boat is operated and controlled by laptop and oil spill is cleanup monitoring using wireless camera. For about Five km can enable the periphery. Rising oil dumped in the sea towards the remote mode, the tool does apparent. Oil spills are a very dangerous occurrence for marine ecosystem. It affects the marine life-forms' existence. It gets unnecessarily threaten. The boat can be controlled anywhere by the laptop. The pictures can be run by wireless camera. Five km can enable the periphery. We further use isolating device fitted to the tube, through which the oil can be carried. Through this mechanism 90 percentage of the oil can be separated. The advantages of this project is, it avoids human labour, clean up about 90% of oil in the seashore, cost is lower than the existing system, Human being are not affected by this work. This Project is eco-friendly.

FABRICATION OF RAILWAY TRACK AND SPEED BREAK POWER GENERATION WITH LIGHT AND GATE CONTROL

Vignesh D, Suresh Kumar M, Srinivasan V, Vignesh S, Prasath M

K.S.Rangasamy College of Technology, Tiruchengode - 637215, TamilNadu, India.

In this project we are generating electrical power as non-conventional method by simply running train on the railway track. Non-conventional energy system is very essential as this to our nation. Non-conventional energy using locomotive path needs no fuel input power to generate the output of the electrical power. The main aim of the concept is to utilize the train crossing time on a railway track. The power is produced by the railway track power generation equipment. These to be done by simple gear drive mechanism. The generated power is used to operate the light and gate control in the railway track crossing areas where we use sensors to control the light and gate control

SOLAR BASED SEAWAGE WATER FILTRATION PLANT

Gangatharan G, Manikandan G, Karthick V, Mavin M, Mr.Gnanasekaran M

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The objective of this concept is to recycle the water from the waste water. Here we design new equipment for water recycling process for filtering the waste water into purified water. This equipment can be used in home, mineral water industries. This equipment will give main important role for human being because the water is the main source of human. This project is designed by water tank, pump, collecting tank, and purifier. This concept shows the importance and the necessity to increase the efficiency of cleaning process of the residual waters from waste industry. There are presented the methods of treatment of the residual wastewaters, in order to find the best condition and parameters treatment process.

MANUALLY EXPANDABLE STAIR CLIMB TRANSPONDER

Saravanan P, Nithish A, Noorulhassan S,Pradeep S, Premkumar D

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This project deals with the designing and manufacturing of a vehicle, which can climb stair or move along very rough surface. The technical issues in designing of this vehicle are the stability and speed of the vehicle while climbing stairs. However, the steepness of the stairs is also the important concern of this study. The uses of this special vehicle are in the frequent lift of goods such as books for library, medicines for hospital, regular mails for any institutes, or transportation any toxic material for industries and give freedom to the retarded person or paralyzed patients to move anywhere over flat surface as well as stairs.

REVIEW ON MgO AND ZnO BASED NANOFLUIDS IN HEAT TRANSFER APPLICATIONS

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Hybrid Nanofluids have an important consideration due to their excellent thermo physical properties of heat transfer enhancement, which is done by a grouping of more than one Nano-additive for required application. Then the Nanoparticle is synthesized from its base component using various techniques such as co-precipitation and sol-gel method. More than one Nanoparticle was converted into composite Nanofluids by adding a base solution like ethylene glycol and glycerol of using stirrer method. The various researches are carried out at different concentrations (0.1, 0.3, 0.5 and 0.7) of giving mixtures. The prepared Nanofluid is fed into the concentric heat exchanger, shell type heat exchanger and heat pipe. Heat exchanger and heat pipes are used to study about the thermal performance of Nanoparticles at different flow rates. This paper reviews around thirty papers of experiment results, their results are shown that Nanoparticles will increase in viscosity and thermal properties in a heat exchanger and also increase in heat transfer rate.

RFID BASED IGINITION SYSTEM

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A vehicle theft is becoming very common nowadays, which is one of the main issues for a person having car or bike. In this technical paper work; the design of a fingerprint and RFID tag based authentication for a vehicle is explained. Fingerprint identification gives the biometric based authentication and RFID tag gives a keyless authentication for a vehicle. So inorder to avoid vehicle theft the proposed system is designing a keyless authentication system for a vehicle instead of going with key based authentication system; it also provides a biometric based authentication which is a fingerprint of a person. A person, who wishes to drive the vehicle, first step is to verify with their fingerprint whether the person who wish to Drive the vehicle is allowed to drive or not; by checking the data base, once verification done then ignition unit of vehicle will starts automatically. If the person is not valid in the Fingerprint Module data base then the vehicle will not get started.

FABRICATION OF TWO WHEELER ENGINE COOLING SYSTEM USING PELTIER PLATES

Selvaraj K,Arunraj S,Arunkumar R,Hariharaprasath S,Babu I

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The purpose of this project has been to investigate the possibility of heating and cooling air by connecting peltier plates to system fins. When system runs it will dissipate heat and various toxic gases into atmosphere which causes global warming. At the mean time over heating of system will also affect the performance of the system when it's too hot. In order to reduce toxicity level of exhaust gases and smooth running of system we implement and tested peltier elements to cool the system to certain temperature. If the peltier is implemented on the system it will absorb the flue gas from the system to dissipate the cooled air into the atmosphere. It will increase the performance of the system and also reduces the global warming.

EFFECT OF NANO FLUIDS IN HEAT TRANSFER CHARACTERISTICS USED IN GEOTHERMAL APPLICATION

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Nano Fluids can be used to improve the Heat Transfer Characteristics, which can be used in geothermal applications. Nano Particles, Al2O3 and Carbon nanodots are synthesized using Sol Gel process at Optimum Temperature by reducing Aluminium Nitrate and Poly Ethylene Glycol by Ammonia and Citric Acid respectively. Presence of carbon nanodots NPs are confirmed by FTIR, XRD etc .Nano Fluids was prepared by dispersing the Nano Particles in Base Fluids. The Thermal Conductivity of Nano Fluids was tested using Hot Disk Thermal Constant Analyzer. The Nano Fluids was tested for Thermal Performance in Different Base Fluids (Water and Ethylene Glycol), in Different Volumetric Concentration (0.01%, 0.02%, 0.05%, 0.075%) and in Different Power Inputs (40W, 70W, 120W, 180W, 210W) by using Thermosyphon Setup.

PREPARATION OF ALTERNATE FUELS USING WASTE COOKING OILS

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As crude oil price reach a new high, the need for developing alternate fuels has become acute. Alternate fuels should be economically attractive in order to compete with currently used fossil fuels. In this work, biodiesel (ethyl ester) was prepared from waste cooking oil collected from various regions. Ethyl alcohol with sodium hydroxide as a catalyst was used for the

transesterification process. The fatty acid composition of the final biodiesel esters was determined by gas chromatography. The biodiesel was characterized by its physical and fuel properties including density, viscosity, acid value, flash point, cloud point, pour point, index, water and sediment content, total and free glycerin content and phosphorus content and sulfur content. Production of biodiesel from waste cooking oils for diesel substitute is particularly important because of the decreasing trend of economical oil reserves, environmental problems caused due to fossil fuel use and the high price of petroleum products in the international market.

EMISSION AND PERFORMANCE OF THE METHANOL-GASOLINE BLENDS IN A 4-STROKE PETROL ENGINE

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This study discusses the performance and exhaust emissions of a vehicle fueled with low content alcohol (methanol) blends and pure gasoline. A Methanol fuel engine is an alternative fuel vehicle that uses methanol as its onboard fuel for motive power. The term may refer to a personal transportation vehicle, such as an automobile, or any other vehicle that uses ethanol in a similar fashion, such as an aircraft. In this study, experiments have been done to measure the performance and emissions of a 4-stroke S.I. The engine is run at different loads and methanol blending percentages. The engine It is found that increasing the blending percentage reduces the emitted concentration of carbon oxides. However it is found that break power and break thermal efficiency are increased with increasing methanol blending percentage due to higher cylinder temperatures. The results showed that use of 10% volume of methanol blending with the gasoline appears to be good option for replacing any oxygenate additives in the gasoline, where the CO, CO2,NOx and HC are decreases and the fuel consumption of the blend is lower than of the commercial gasoline.

VERTICAL AXIS WIND TURBINE WITH SOLAR POWER GENERATION

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Solar energy and wind energy is very important means of expanding renewable energy resources. In this paper the efficient way of solar wind power generation technique is achieved by combined prototype. Solar is a nonconventional source of energy, considering this we have developed solar panels so that we can fulfill our electricity need. But due to revolution of the earth, solar source i.e. sun does not face the panel continuously hence less electricity is produced. The energy panel should face the SUN till it is present in a day. But the problem is we cannot generate power during night time so that's why we using turbine blade to generate power during night time. Basically the air flow is more at night time compare with day time. In wind turbine single rotor is connected to double helical gear which get more electricity. By using this both wind and solar energy can be generated.

COMPRESSED AIR ENGINE

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The Air Driven Engine is an eco-friendly engine which operates with compressed air. An Air Driven Engine uses the expansion of compressed air to drive the pistons of an engine An Air Driven Engine is a pneumatic actuator that creates useful work by expanding compressed air. There is no mixing of fuel with air as there is no combustion. An Air Driven Engine makes use of Compressed Air Technology for its operation The Compressed Air Technology is quite simple. If we compress normal air into a cylinder the air would hold some energy within it. This energy can be utilized for useful purposes. When this compressed air expands, the energy is released to do work. So this energy in compressed air can also be utilized to displace a piston.

ANALYSIS OF BOILER PARTS AND TUBE FAILURE

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Boiler tube failure is the prime reason of forced outage at coal fired thermal power plants. With ever increasing demand for electricity, it is very necessary for the power plants to generate electricity without forced outages. Number of failure is observed in economizer zone. Economizer is the medium for transportation of the feed water to boiler efficiency. Economizer is placed in the flue gas path, to absorb the heat from the flue and increase the temperature of the feed water. Factors contributing for economizer tube failure include stress rupture, erosion, water side corrosion, fire side corrosion and lack of material quality. Factor influencing the erosion is the velocity of flue gas, the temperature of flue gas, the mineral content in coal, the arrangement of pressure parts and deviation from design condition. Amongst these factors velocity of flue gas ash particle has the predominant effect on erosion of economizer tubes. Important to determine and correct the root cause to get your boilers back on line reduces or eliminate future forced outages.

A COMPARATIVE ANALYSIS OF OPTIMIZATION METHODS

Dhavamani S, Shanmugavadivu A, Latha R, Baskar T , Rajasekar P, Murugapandian GS

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Regression testing is an inescapable and very expensive task to be performed, often in a resource and time constrained environment. The goal is to minimize the time spent in the process of testing by reduction in the number of test cases to be used. Thus various techniques are being used for test case optimization, to select the less indistinguishable test cases while providing the best possible fault coverage. This paper presents a comparative analysis of the different test case optimization methods There are various optimization methods available for the context. This review explains about the different optimization methods on the basis of their evolution, methodology, performance and applications.

SYNTHESIS, STRUCTURAL, OPTICAL, AND ANTIMICROBIAL STUDIES OF P-NITRO ANILINIUM CINNAMATE SINGLE CRYSTAL.

Abinaya Mathialagan Suguna S

University of Madras , Guindy Campus, Chennai-25, S.D.N.B.Vaishnav College for Women,Chennai-44

In this present study, we synthesis the novel Para-Nitro Anilinium Cinnamate by click reaction . para nitro anilinium and cinnamic acid are mixed together in ethanol medium to form a P-Nitro Anilinium Cinnamte crystal . Structural characterization evaluated using single crystal XRD. This crystal is Hexagonal in structure with lattice parameter of a=b≠c . The formed crystal is Charactrerised for chemical analysis like FTIR and H1 and C13 NMR for the confirmation of the formed product. This formed P-Nitro anilinum Cinnamate is further characterized for the *in-vitro* biological activity like antimicrobial study and MTT assay .

Applications of optimization methods to forest management

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The application of optimization methods to forest management has given rise to a successful line of investigation in recent decades. However, there have been few publications associated with the application of these techniques to the management of l forest plantations, which consider the important role played by these forest systems in the supply of diverse goods and services. This study presents an overview of this literature which, by analyzing 67 articles published in journals of Science, highlight, among other aspects, the techniques employed, their evolution, the functional objectives and constraints considered, or the type of software deployed in these studies. The results show how Model I has been the one most frequently used in these studies, and how the spatial component is increasing in importance. However, classic optimization methods, such as mixed integer programming, have been those most commonly resorted to, although the employment of multi-criteria techniques such as goal programming and analytic hierarchical process have strongly emerged in recent years.

DESIGN AND ANALYSIS FOR SWIRL VANES GRIPPER

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Air flow grippers have dominated the automation, manufacturing and food industries, since its existence, due to its ease of handling and cost-effectiveness. The principle behind the air-flow grippers is that a suction effect generated due to the pressure drop being created in the vicinity of the object and the gripper outlet. Swirl-flow gripper creates a lifting force by the rotation of vanes where the vacuum pressure to produce at the central region of the gripper, as an effect, the outside air rushes into the gripper thereby enabling a suction effect. The lifting force thus exerted on the object depends on the motor speed, the clearance between the object and the gripper, geometry of the vanes and weight of the object. Therefore, a change in above parameters can significantly alter the performance of the swirl vane gripper.A Swirl vane gripper is designed by using cero 3.0 the three-dimensional model is simulated using ANSYS 18.1 for determining the pressure distribution over the vanes. The vane design used in the gripper is selected from the existing model, where the vane curvature and vane thickness are modified. The analysis is thus done for three models, which has different types of vane angles to design in 30°, 45°and 60° respectively, for obtaining pressure distribution. Thus, the comparison of the pressure distribution values in three design model in CFD analysis in this paper.

FABRICATION OF PNEUMATIC JACK

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The main target of project is to improve version of a mini pneumatic jack. Pneumatic jack is fabricated model which installed on the four wheeler, which is used to solve the problem arising in the conventional jack. This will be more efficient for the user. This machine is pneumatic powered which has low co-efficient of friction. A pneumatic cylinder erected provides power to lift up the Jacky. This pneumatic powered machine and requires no other means of power to operate. This fabricated model consist of small size reciprocating air compressor which is driven by the battery use in four wheeler and an air tank is use to jack store the compressed air, and a pneumatic control valve which regulate the air flow and double acting cylinder used as a jack which perform lifting. This jack is installed on the chassis using jack and the problem related to tyre such as puncture tyre, tyres replacement and wheel balancing can be resolved with less effort and time.

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NCETET19 / MECH08	S.Sarath Kumar and Mr.K.Venkateshwaran	MECHANICAL	KSR College of Engineering	Construction Safety in Hazardous Confined Space	136
NCETET19 / MECH09	Mr.S.Baskaran,R.Santhosh kumar, G.Sathishkumar, R.Sreenkumar and B.Thirunavukkarasu	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Design and Analysis of Fins With Various Parameters	137
NCETET19 / MECH10	Mohan.N.S, Karthic Raja.E.M, Mageshwaran.V ,Mohammed Fasith.M and Nagarjun.N	MECHANICAL	Erode Sengunthar Engineering College, Erode	Investigation on the Properties of Sand Mould Casting using Tea Waste	138
NCETET19 / MECH11	Parthiban.J,Ajithkumar.A, Ajithkumar.A, Arivanandham.M and Arunpandian.P	MECHANICAL	Erode Sengunthar Engineering College, Erode	Mechanical Properties and wear Properties of Coconut Henequen Fibre Reinforcing	139
NCETET19 / MECH12	Rajkumar.T, Kalidass.M, Charan.S, Haniath.S,Mohamed Hanifa.M & Arunkumar.G	MECHANICAL	K. Ramakrishnan College of Technology, Trichy	Optimization of Friction Stir Welding Dissimilar Aluminium AA2024 and AA2999 Alloy by Using a Response Surface Method	140
NCETET19 / MECH13	A. Prem Kumar, M. Kishore, N. Naveen, P. Prashith and Robert Sam Daniel	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Performance Analysis of Biodiesel Blends Using CI Engine	141
NCETET19 / MECH14	R.Barathkumar, A.Pranesh, L.Monika, R.Ragu and C.Sanjeevi	MECHANICAL	KSR Institute for Engineering and Technology, Namakkal	Performance of Welding Characteristic in Aluminium Alloy 5052 Using Gas Tungsten Arc Welding	142
NCETET19 / MECH15	Srinivasamoorthy .R, Nandha kumar .M, Parthesh S, Kumar jonath.A and Mohammed vajahath ali.A	MECHANICAL	Erode Sengunthar Engineering College, Erode	Pneumatic Pipe Reel Punching Machine	143

PERFORMANCE OF WELDING CHARACTERISTIC INALUMINIUM ALLOY 5052 USING GAS TUNGESTON ARC WELDING

R.Barathkumar[1], A.Pranesh[2], I.Monika[2], R.Ragu[2], C.Sanjeevi[2]
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ABSTRACT:

In this experimental work, aluminium alloy (5052) weldments were made using Gas Metal Arc Welding (GMAW)with pulsed current and non- pulsed current at different frequencies 2Hz, 4Hz, 6Hz. Non-destructive tests like radiography, liquid penetrate test were conducted, evaluated and compared with pulsed and non-pulsed current welding at different frequencies of thickness materials (2mm of 5052 aluminium alloy). The aim of this experimental work is to see the effect of pulsed current on the quality of weldments. The experimental results pertaining to different welding parameters for the above material using pulsed and non-pulsed current GMAW are discussed and compared.

KEYWORDS: Gas Metal Arc Welding, Constant Current Welding, Pulsed current welding and Heat Affected zone

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in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019.

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of K.S.R College of Engineering
has participated & presented a paper entitled Temprature Control System using Fuzzy logic
in 6th International Conference on Emerging Trends in Engineering and Technology (ICETET'19) held on 15th & 16th March, 2019.

Dr.R.RAJA
Convenor

Dr.R.PALANICHAMY
Principal

Er.S.P.VARADHARAJAN
Managing Director

SELVAM COLLEGE OF TECHNOLOGY

PONNUSAMY NAGAR, SALEM ROAD(NH-44),
NAMAKKAL - 637003. TAMILNADU.

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Web: https://selvamtech.edu.in

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Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai

NATIONAL CONFERENCE
ON
ADVANCED CONSTRUCTION & SUSTAINABLE ENERGY SOURCES
NCACSES-2K19

Certificate of Participation

~~Mr/Ms/Mrs~~/Dr. J. GNANAMBIGAI of K.S.R College of Engineering presented a paper entitled Li-fi assisted indoor wireless tracking for smart buildings at NCACSES-2K19 held on 15th & 16th March 2019 organized by Storm Association of Department of Civil Engineering and International Research Journal of Engineering and Technology (IRJET).

V.

Mr.V.Prabhu
Convener

Dr.A.Natarajan
Principal

VELALAR COLLEGE OF ENGINEERING AND TECHNOLOGY

(Autonomous)
Accredited by NAAC with 'A' Grade
Accredited by NBA (BME,CSE,ECE,EEE & IT)
THINDAL ERODE - 638 012.

11th NATIONAL CONFERENCE
on
TRENDS IN ENGINEERING APPLICATIONS

NCTEA'19

CERTIFICATE

This is to certify that ~~Mr.~~/Ms. A. JAYAMATHI

of K.S.R COLLEGE OF ENGINEERING

has presented a paper entitled ESTIMATION OF LEFT VENTRICULAR MOTION FROM CARDIAC C
AGGIED MRI USING FUZZY LOCAL INFORMATION ALGORITH in the National Conference on

"Trends in Engineering Applications" held on 2nd March 2019.

HOD

Dean Academics

Principal

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.
(An ISO 9001 : 2008 Certified Institution)
Arasanoor, Sivagangai - 630 561.

Certificate

This is to certify that Mr/Ms A. JAYAMATHI
of K.S.R College of Engineering
has participated & presented a paper entitled IRIS image based diabetic disease prediction.
in 6th International Conference on Emerging Trends in Engineering and Technology (ICETET'19) held on 15th & 16th March, 2019.

Dr.R.RAJA
Convenor

Dr.R.PALANICHAMY
Principal

Er.S.P.VARADHARAJAN
Managing Director

AL-AMEEN ENGINEERING COLLEGE

(Accredited by NAAC with 'A' Grade & An ISO Certified Institution)

Karundevanpalayam, Nanjai Uthukuli Post, Erode - 638 104. Ph : (0424) 2500354

8th International Conference

on

Advanced Science and Engineering Research

(ASER-2019)

Certificate

This is to certify that Mrs. P. THILAGAVATHI., AP

KSR COLLEGE OF ENGINEERING *has*

~~*Participated*~~ */ Presented a paper entitled* HYBRID TEST

DATA COMPRESSION USING CLCBCC AND

RUN LENGTH ENCODING

in the 8th International Conference on Advanced Science and Engineering Research (ASER-2019) organized by the Departments of CIVIL, CSE, ECE, EEE, MECH and S&H on 23rd March 2019.

ICRIETM 2019

50

In Association with

IEEE

Nandha Engineering College

(Autonomous) Erode - 52

Approved by AICTE, Affiliated to Anna University, Chennai & Accredited by NAAC & NBA

Certificate of Participation

This is to certify that

P.Thilagavathi

K.S.R. College of Engineering

has presented a paper on

Improving fault coverage and reduce the number of test data in test cube by using dynamic IFSR reseeding

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person

Convener

Principal

SRI KRISHNA INSTITUTIONS
COIMBATORE

SRI KRISHNA
COLLEGE OF ENGINEERING AND TECHNOLOGY

(AN AUTONOMOUS INSTITUTION)
AFFILIATED TO ANNA UNIVERSITY , CHENNAI | ACCREDITED BY NAAC WITH 'A' GRADE | ACCREDITED BY NBA (CSE, ECE, IT, MECH & MCT) |
KUNIYAMUTHUR, COIMBATORE - 641008.

2nd International Conference on

Recent Advances in Engineering and Technology - ICRAET 2019

8th & 9th - February 2019

IEEE MADRAS SECTION | ICT ACADEMY Innovate... Collaborate... Educate... | DREAM OVERSEAS EDUCATION | TIME

Certificate

This is to certify that Mr./Ms./Dr. R. Poornima of KSR College of Engineering has presented a paper titled GPS based real time vehicle tracking system using android in the Second International Conference on "Recent Advances in Engineering and Technology - ICRAET 2019" organised by Sri Krishna College of Engineering and Technology,Coimbatore during 8th & 9th February 2019.

HOD | Convenor | Principal

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

Approved by AICTE,New Delhi & Affiliated to Anna University, Chennai.
(An ISO 9001 : 2008 Certified Institution)
Arasanoor, Sivagangai - 630 561.

Certificate

This is to certify that Mr/Ms Dr. R. Eswaramoorthi, Asso/Prof of K.S.R. College of Engineering has participated & presented a paper entitled Monitoring and controlli the industrial boiler temperature using GSM Technology in 6th International Conference on Emerging Trends in Engineering and Technology (ICETET'19) held on 15th & 16th March, 2019.

Dr.R.RAJA
Convenor

Dr.R.PALANICHAMY
Principal

Er.S.P.VARADHARAJAN
Managing Director

M.Kumarasamy
College of Engineering
NAAC Accredited Autonomous Institution
Approved by AICTE & Affiliated to Anna University
ISO 9001:2015 Certified Institution
Thalavapalayam, Karur, Tamilnadu.

CERTIFICATE OF PARTICIPATION

This is to certify that ~~Dr./Mr./Ms./Mrs.~~ SATHISH KUMAR .T.M of K.S.R COLLEGE OF ENGINEERING has presented a paper titled ALCOHOL DETECTION WITH AUTOMATIC ENGINE LOCKING SYSTEM USING GSM in Second National Conference on "Signal Processing and Communication Systems" Organized by the Research and Development Cell, Department of Electronics and Communication Engineering on 07th March 2019.

Dr.S.Palanivel Rajan
Organizing Chair

Dr.C.Vivek
HoD/ECE

Dr.N.Ramesh Babu
Principal

NAAC Accredited Autonomous Institution
Approved by AICTE & Affiliated to Anna University
ISO 9001:2015 Certified Institution
Thalavapalayam, Karur, Tamilnadu.

CERTIFICATE OF PARTICIPATION

This is to certify that ~~Dr./Mr./Ms./Mrs.~~ SATHISH KUMAR T.M of K.S.R. COLLEGE OF ENGINEERING has presented a paper titled PROTECT CHILDREN FROM CHILD ABDUCTION USING RFID TIME GSM UNDER MEASUREABLE DISTANCE in Second National Conference on "Signal Processing and Communication Systems" Organized by the Research and Development Cell, Department of Electronics and Communication Engineering on 07th March 2019.

Dr.S.Palanivel Rajan
Organizing Chair

Dr.C.Vivek
HoD/ECE

Dr.N.Ramesh Babu
Principal

ICRIETM 2019

In Association with

IEEE

Nandha Engineering College

(Autonomous) Erode - 52

Approved by AICTE, Affiliated to Anna University, Chennai & Accredited by NAAC & NBA

Certificate of Participation

This is to certify that

T.M.Sathish Kumar

K.S.R. College of Engineering

has presented a paper on

Design of energy-efficient IOT devices usingFINFET based secure adiabatic logic

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person | Convener | Principal

ICRIETM 2019

In Association with

IEEE

Nandha Engineering College

(Autonomous) Erode - 52

Approved by AICTE, Affiliated to Anna University, Chennai & Accredited by NAAC & NBA

Certificate of Participation

This is to certify that

A.Vellingiri

K.S.R.COLLEGE OF ENGINEERING

has presented a paper on

Effective Breast Cancer Detection for Medical Diagnosis System Using Fuzzy Logical Model

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person | Convener | Principal

NANDHA COLLEGE OF TECHNOLOGY

PERUNDURAI MAIN ROAD, ERODE - 638052, TAMIL NADU, INDIA.

(APPROVED BY AICTE, NEW DELHI, AFFILIATED TO ANNA UNIVERSITY, CHENNAI & ACCREDITED BY NAAC WITH 'A' GRADE)

6th National Conference

on

EMERGING TRENDS IN ENGINEERING & TECHNOLOGY

CERTIFICATE OF PARTICIPATION

This is to certify that ~~*Dr./Prof./Mr./Ms.*~~ P. SIVASANKARA RAJAMANI

KSR COLLEGE OF ENGINEERING, *has participated and presented a paper entitled*

BIDELOMETRIK PROFIBUS NETWORK ARCHITECTURE MODIFICATION

in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019.

Convener 16/3/19

Principal

CEO

Dr. S. Arumugam

NANDHA COLLEGE OF TECHNOLOGY

PERUNDURAI MAIN ROAD, ERODE - 638052, TAMIL NADU, INDIA.

(APPROVED BY AICTE, NEW DELHI, AFFILIATED TO ANNA UNIVERSITY, CHENNAI & ACCREDITED BY NAAC WITH 'A' GRADE)

6th National Conference

on

EMERGING TRENDS IN ENGINEERING & TECHNOLOGY

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./Prof./Mr./Ms. SIVASANKAR RAJAMANI P ASSOCIATE PROFESSOR

K.S.R COLLEGE OF ENGINEERING *has participated and presented a paper entitled*

ANALYSIS OF THREE IOT BASED WIRELESS SENSORS FOR ENVIRONMENTAL MONITORI

in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019.

Convener

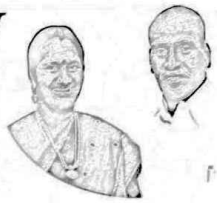
Principal

Dr.M.Vijayakumar

CEO

Dr. S. Arumugam

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE



Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.
(An ISO 9001 : 2008 Certified Institution)
Arasanoor, Sivagangai - 630 561.

Certificate

This is to certify that Mr/~~Ms~~ K. Karuppanasamy
of K.S.R. College of Engineering
has participated & presented a paper entitled Fire and gas avoiding system using arduino and GSM.
in 6th International Conference on Emerging Trends in Engineering and Technology (ICETET'19) held on 15th & 16th March, 2019.

Dr.R.RAJA
Convenor

Dr.R.PALANICHAMY
Principal

Er.S.P.VARADHARAJAN
Managing Director

ICRIETM 2019

In Association with

IEEE

Nandha Engineering College

(Autonomous) Erode - 52

Approved by AICTE, Affiliated to Anna University, Chennai & Accredited by NAAC & NBA

Certificate of Participation

This is to certify that

P.Mahendran

K.S.R. College of Engineering

has presented a paper on

Implementation of students attendance monitoring system using RFID and GSM

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person | Convener | Principal

ICRIETM 2019

In Association with

IEEE

Nandha Engineering College

(Autonomous) Erode - 52

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Certificate of Participation

This is to certify that

P.Mahendran

K.S.R. College of Engineering

has presented a paper on

Multi-objective sensor placement using the effective independence model for wireless sensor networks in machine health monitoring

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person

Convener

Principal

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

Approved by AICTE,New Delhi & Affiliated to Anna University, Chennai.
(An ISO 9001 : 2008 Certified Institution)
Arasanoor, Sivagangai - 630 561.

Certificate

This is to certify that Mr/Ms K. KIRUBA
of K.S.R College of Engineering
has participated & presented a paper entitled Smart Footwear using Piezoelectric Plates
in 6th International Conference on Emerging Trends in Engineering and Technology (ICETET'19) held on 15th & 16th March, 2019.

Dr.R.RAJA	Dr.R.PALANICHAMY	Er.S.P.VARADHARAJAN
Convenor	Principal	Managing Director

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.
(An ISO 9001 : 2008 Certified Institution)
Arasanoor, Sivagangai - 630 561.

Certificate

This is to certify that ~~Mr~~/Ms K. Kirubha
of K.S.R. College of Engineering
has participated & presented a paper entitled Multiface recognition attandance system with Email Acknowledgement.
in 6th International Conference on Emerging Trends in Engineering and Technology (ICETET'19) held on 15th & 16th March, 2019.

Dr.R.RAJA
Convenor

Dr.R.PALANICHAMY
Principal

Er.S.P.VARADHARAJAN
Managing Director

KPR

Institute of Engineering and Technology

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DSIR Certified Scientific and Industrial Research Organization

Top 200 Band in NIRF Ranking 2018

Arasur, Coimbatore - 641 407

DEPARTMENT OF MECHANICAL ENGINEERING

Certificate of Participation

This is to certify that ~~Dr./Mr./Ms.~~ J. RAMESH KUMAR

of K.S.R COLLEGE OF ENGINEERING, TIRUCHENGODE has

presented a paper entitled AGRICULTURAL ROBOT USING

FIREBIRD 'V'

at 4th National Conference on "TECHNOLOGICAL ADVANCEMENTS IN MATERIALS, MANUFACTURING AND INDUSTRIAL ENGINEERING" "*TAMMIE-2019*" organized by Department of Mechanical Engineering during 1-2 March, 2019 held at KPR Institute of Engineering and Technology, Coimbatore.

Dr. A.Saravanakumar
Organizing Secretary

Dr. N. Gunasekaran
Convener

Dr. K. Bommanna Raja
Principal

KONGU ENGINEERING COLLEGE

(AUTONOMOUS)

PERUNDURAI ERODE-638060 TAMILNADU INDIA.

Estd : 1984

CSI-KEC STUDENT BRANCH

SIXTH NATIONAL CONFERENCE ON NETWORKING, INTELLIGENCE & COMPUTING

NCNIC - 2019

CERTIFICATE

This is to certify that Mr. / Ms. RAMESH KUMAR.J of K.S.R COLLEGE OF ENGINEERING has ~~presented~~ / co-authored a paper titled LOCALIZING SALIENT BODY MOTION IN MULTIPERSON SCENE USING FUZZY WITH MORPHOLOGICAL SEGMENTATION ALGORITHM in the Sixth National Conference on "NETWORKING, INTELLIGENCE & COMPUTING" organized by CSI-KEC Student Branch, Kongu Engineering College, Perundurai held on March 16, 2019.

Student Branch Coordinator

Principal

ICRIETM 2019

(12)

In Association with

IEEE

Nandha Engineering College

(Autonomous) Erode - 52

Approved by AICTE, Affiliated to Anna University, Chennai & Accredited by NAAC & NBA

Certificate of Participation

This is to certify that

J.RameshKumar

K.S.R. College of Engineering

has presented a paper on

Improve localizing salient body motion in multi-person scenes using fuzzy with morphological segmentation algorithm

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

S. Ramesh
Chair Person

C N. Ma
Convener

N. Nanjundan
Principal

ICRIETM 2019

73

In Association with

IEEE

Nandha Engineering College

(Autonomous) Erode - 52

Approved by AICTE, Affiliated to Anna University, Chennai & Accredited by NAAC & NBA

Certificate of Participation

This is to certify that

J.RameshKumar

K.S.R. College of Engineering

has presented a paper on

Improve localizing salient body motion in multi-person scenes using fuzzy with morphological segmentation algorithm

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person | Convener | Principal

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Approved by AICTE,New Delhi & Affiliated to Anna University, Chennai.
(An ISO 9001 : 2008 Certified Institution)
Arasanoor, Sivagangai - 630 561.

Certificate

This is to certify that Mr/Ms S. MANOHARAN
of K.S.R College of Engineering
has participated & presented a paper entitled Signal Booster for 2G/3G/4G in Smart phones
in 6th International Conference on Emerging Trends in Engineering and Technology (ICETET'19) held on 15th & 16th March, 2019.

Dr.R.RAJA
Convenor

Dr.R.PALANICHAMY
Principal

Er.S.P.VARADHARAJAN
Managing Director

2019

In Association with

IEEE

Nandha Engineering College

(Autonomous) Erode - 52

Approved by AICTE, Affiliated to Anna University, Chennai & Accredited by NAAC & NBA

Certificate of Participation

This is to certify that

K.P.Uvarajan

K.S.R. College of Engineering

has presented a paper on

Network Congestion Control Monitoring System Using FWP and SWP with Multi Hop Model

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person | Convener | Principal

78

KIT - KALAIGNARKARUNANIDHI INSTITUTE OF TECHNOLOGY

(Accredited with 'A' Grade by NAAC)
(Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai)
KIT Global Institute for Advanced Studies & Research
Coimbatore - 641 402, Tamilnadu, India.

NBA NATIONAL BOARD OF ACCREDITATION For CSE, ECE, EEE & MECH

Certificate of Appreciation

This is to certify that Dr./Mr./Ms./Prof. VELMURUGAN . S

of K.S.R COLLEGE OF ENGINEERING

has presented a paper titled PERFORMANCE ANALYSIS OF CURRENT MIRRORED FOOTED DOMINO COMPARATOR USING LECTOR TECHNIQUE

in the **International Conference on Science, Technology, Engineering and Management (ICSTEM'19)** held during 22-23, March 2019 at KIT-Kalaignarkarunanidhi Institute of Technology, Coimbatore, Tamilnadu, India.

Dr.S.Santhi	Dr.M.Ramesh	Dr. N. Mohan Das Gandhi	Dr. P. Anbalagan
Organizing Chair	Vice-Principal	Principal	Director - Academics

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Accredited by NBA (BME,CSE,ECE,EEE & IT)

THINDAL ERODE - 638 012.

79

11th NATIONAL CONFERENCE
on
TRENDS IN ENGINEERING APPLICATIONS

NCTEA'19

CERTIFICATE

This is to certify that Mr./~~Ms.~~ R. MAHENDRAN

of K.S.R COLLEGE OF TECHNOLOGY

has presented a paper entitled LOW POWER ASYNCHRONOUS VITERBI DECODER USING MINIM TRANSITION HYBRID REGISTER EXCHANGE METHOD in the National Conference on "Trends in Engineering Applications" held on 2nd March 2019.

HOD

Dean Academics

Principal

PANDIAN SARASWATHI YADAV ENGINEERING COLLEGE

Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai.
(An ISO 9001 : 2008 Certified Institution)
Arasanoor, Sivagangai - 630 561.

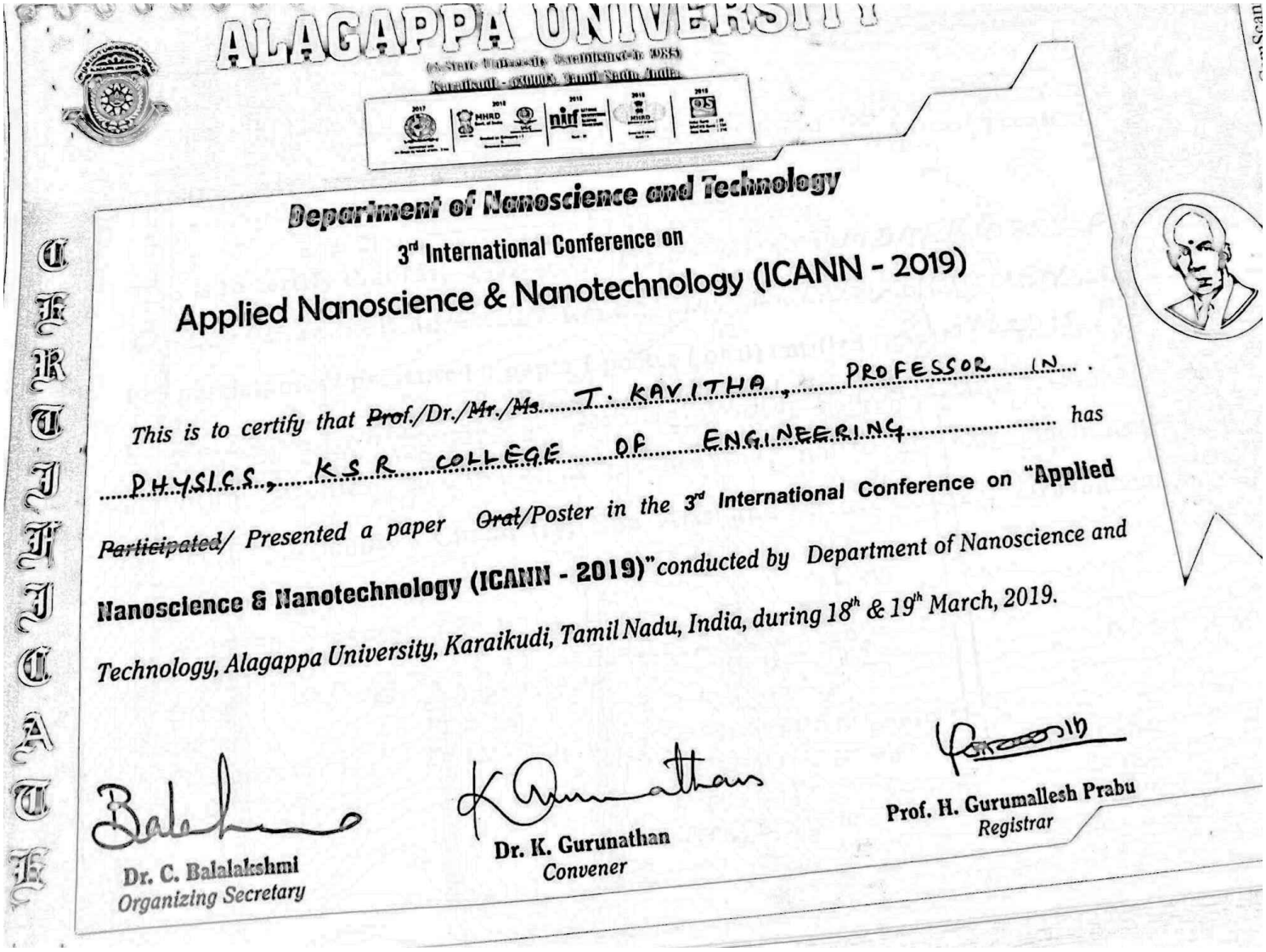
Certificate

This is to certify that Mr/Ms C. Karthick
of K.S.R. College of Engineering
has participated & presented a paper entitled Avoiding animals and vehicles using wireless sensor network.
in 6th International Conference on Emerging Trends in Engineering and Technology (ICETET'19) held on 15th & 16th March, 2019.

Dr.R.RAJA
Convenor

Dr.R.PALANICHAMY
Principal

Er.S.P.VARADHARAJAN
Managing Director



ALAGAPPA UNIVERSITY

(A State University Established in 1985)

Karaikudi - 630003, Tamil Nadu, India.

Department of Nanoscience and Technology

3rd International Conference on

Applied Nanoscience & Nanotechnology (ICANN - 2019)

CERTIFICATE

This is to certify that ~~Prof./Dr./Mr./Ms~~ T. KAVITHA, PROFESSOR IN PHYSICS, KSR COLLEGE OF ENGINEERING has ~~Participated~~/ Presented a paper ~~Oral~~/Poster in the 3rd International Conference on "Applied Nanoscience & Nanotechnology (ICANN - 2019)" conducted by Department of Nanoscience and Technology, Alagappa University, Karaikudi, Tamil Nadu, India, during 18th & 19th March, 2019.

Dr. C. Balalakshmi
Organizing Secretary

Dr. K. Gurunathan
Convener

Prof. H. Gurumallesh Prabu
Registrar

SUN ARTS AND SCIENCE COLLEGE

(Permanantly Affiliated to Thiruvalluvar University, Vellore) (Co - Education)

minds in the making

Vettavalam Road, Keeranoor (V)
Rajapalayam (P), Tiruvannamalai 606755.
Phone : 04175 29807
Email: sunartscollege@gmail.com
Mobile: 97865 99939, 97893 81111
www.suncolleges.ac.in

This is to certify that Mr/Ms/Dr. T. SHANMUGA SUNDARI, ASST. PROF. OF CHEMISTRY, KSR COLLEGE OF ENGINEERING, TIRUCHENGODE

has participated/ presented a paper (poster / oral) entitled Synthesis, Spectroscopic and Catalytic Studies of Nanophosphorilated carbon

in National Conference on "Recent Advances in Chemistry and Nanomaterials (RACN-2019) held at Department of Chemistry, Sun Arts and Science College, Tiruvannamalai - 606 755 on 1st February, 2019.

Convener
Dr. R.Subramanian
HOD, Chemistry

Principal
Dr. G.Sasikumar

Resource Person
Dr.Balakrishna Kalluraya, FRSC
Professor of Organic Chemistry
Mangalore University
Mangalagangothri, Mangalore

Resource Person
Dr. D.Rajagopal
Professor of Chemistry
School of Advanced Science
VIT University, Vellore

K.S.R. COLLEGE OF ENGINEERING

TIRUCHENGODE-637 215

(Autonomous)

DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE OF EXCELLENCE

ICSM 2K19

This is to certify that Dr./~~Mr./Mrs.~~ T. SHANMUGA SUNDARI

of K.S.R. COLLEGE OF ENGG. T-CODE.

has participated/presented a paper entitled A NOVEL APPROACH FOR LEAD (II) REMOVAL FROM TANNERY EFFLUENTS BY NANO ACTIVATED CARBON DERIVED UTILIZING PITHECELLOBIUMDULCE WOOD.

in oral/poster in the International Conference on Sustainable Materials (ICSM 2K19) held on 19th and 20th March 2019.

CONVENER CO-CONVENER PRINCIPAL

(1)

AL-AMEEN ENGINEERING COLLEGE

(Accredited by NAAC with 'A' Grade & An ISO Certified Institution)

Karundevanpalayam, Nanjai Uthukuli Post, Erode - 638 104. Ph : (0424) 2500354

8th International Conference

on

Advanced Science and Engineering Research

(ASER-2019)

Certificate

This is to certify that Dr.:S.RAMESH., Prof./EEE..... *has*

.....K.S.R COLLEGE OF ENGINEERING..... *has*

~~*Participated*~~ */ Presented a paper entitled*.....AUTOMATED.....

...PACKAGING MACHINE FOR RATION SHOP.....

.....

in the 8th International Conference on Advanced Science and Engineering Research (ASER-2019) organized by the Departments of CIVIL, CSE, ECE, EEE, MECH and S&H on 23rd March 2019.

Organizing Secretary
Dr. G. Balaji
Dean - IQAC and S&H

Co-Patron
Dr. A.M.J. Md. Zubair Rahman
Principal

Chief Patron
Alhaj. A.K. Jaffarullah
Secretary & Corresponden

2019

SELVAM COLLEGE OF TECHNOLOGY

PONNUSAMY NAGAR, SALEM ROAD(NH-44),
NAMAKKAL - 637003. TAMILNADU.

Mob: 99420 99122, 99420 99109
Web: https://selvamtech.edu.in

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Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai

International Conference on Information Sciences and Renewable Energy Sources (ICISRES-2K19)

Certificate of Participation

~~Mr/Ms/Mrs~~/Dr. P. SUGANYA, PROFESSOR/EEE
of K.S.R. COLLEGE OF ENGINEERING
has presented a paper entitled AUTOMATIC TEA
LEAF CUTTING MACHINE

at ICISRES-2K19 held on 07th & 08th March, 2019 organized by Departments of Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering & Master of Computer Applications in association with the Institution of Engineers (India), Salem Local Centre, Salem and International Journal of Computer Applications (IJCA).

P. Manimekalai
Dr.P.Manimekalai
Convener

S. Loganathan
Er.S.Loganathan, MIE.,
Hon.Secretary, IE(I), SLC

D. Arulselvan
Er.D.Arulselvan, FIE.,
Chairman, IE(I), SLC

A. Natarajan
Dr.A.Natarajan
Principal

Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University under Category 'A' by MHRD, Estd. u/s 3 of UGC Act 1956 – Re-accredited with 'A+' Grade by NAAC. Recognised by UGC u/s 12-B)

School of Engineering

(Approved by AICTE)

Satellite Campus, Ayya Avinashilingam Nagar, Varapalayam, Thadagam P.O., Coimbatore-641 108, Tamil Nadu, India.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

(*Accredited by National Board of Accreditation, New Delhi)

Certificate of Participation

This is to certify that Dr./~~Mr./Ms~~ P. Suganya, K.S.R college of Engineering, Tiruchengode has participated and presented a paper on IOT based Smart Irrigation system with wired NODE network in the two day International Conference on 'EMERGING TRENDS IN WIRELESS COMMUNICATIONS, SIGNAL PROCESSING AND NETWORKING' held on 07.03.2019 and 08.03.2019 at School of Engineering Campus, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore.

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Co-ordinators

Dr.B.Sargunam
HoD / Department of ECE
Organising Secretary

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ICRTEST'19

Certificate

This is to certify that Mr./Ms./Dr. V. RAVI *from* KSR COLLEGE OF ENGINEERING *has Presented the paper* DEVELOPE A COCONUT TREE CLIMBING AND HARVESTING MACHINE *in the International Conference on "Recent Trends in Engineering, Science and Technology", held on 2nd March - 2019.*

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6th National Conference

on

EMERGING TRENDS IN ENGINEERING & TECHNOLOGY

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./~~Prof./Mr./Ms.~~ RAVI.V PROFESSOR

K.S.R COLLEGE OF ENGINEERING has participated and presented a paper entitled

AUTOMATIC TERRACE ORGANIC FARM MAINTANCE AND MONITORING

in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019.

Convener

Principal

CEO

SELVAMI COLLEGE OF TECHNOLOGY
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Approved by AICTE - New Delhi, Affiliated to Anna University - Chennai

International Conference on Information Sciences and Renewable Energy Sources (ICISRES-2K19)

Certificate of Participation

Mr/Ms/Mrs/Dr. C. KARTHIKEYAN, PROFESSOR
of K.S.R. COLLEGE OF ENGINEERING
has presented a paper entitled ROBOT BASED
DRAINAGE CLEANING SYSTEM

at ICISRES-2K19 held on 07th & 08th March, 2019 organized by Departments of Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering & Master of Computer Applications in association with the Institution of Engineers (India), Salem Local Centre, Salem and International Journal of Computer Applications (IJCA).

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Dr.P.Manimekalai
Convener

S. Ithan
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Er.D.Arulselvan, FIE.,
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Principal

ICRIETM 2019

IEEE

Nandha

Engineering College

(Autonomous) Erode - 52

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Certificate of Participation

This is to certify that

C.Karthikeyan

K.S.R college of Engineering

has presented a paper on

Fabrication of Solar Powered Automatic Seed Sowing Machine

@

INTERNATIONAL CONFERENCE ON RECENT INNOVATIONS IN ENGINEERING, TECHNOLOGY AND MANAGEMENT (ICRIETM-2019)

held on 22nd March 2019 @

Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person

Convener

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8th International Conference

on

Advanced Science and Engineering Research

(ASER-2019)

Certificate

This is to certify that M. VIJAYA KUMAR, (AP/EEE)

K.S.R. COLLEGE OF ENGINEERING *has*

~~*Participated*~~ */ Presented a paper entitled* MINIMIZATION

OF LEAKAGE CURRET IN CASCADED

MULTILEVEL H-BRIDGE INVERTER

in the 8th International Conference on Advanced Science and Engineering Research (ASER-2019) organized by the Departments of CIVIL, CSE, ECE, EEE, MECH and S&H on 23rd March 2019.

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Dean - IQAC and S&H

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Dr. A.M.J. Md. Zubair Rahman
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(18)

International Conference on Information Sciences and Renewable Energy Sources (ICISRES-2K19)

Certificate of Participation

~~Mr/Ms/Mrs~~/Dr. M. RAMASAMY PROFESSOR / EEE
of K.S.R. COLLEGE OF ENGINEERING
has presented a paper entitled I.O.T. BASED FULLY
AUTOMATED ROAD BLOCKER AND SPEED
BUMPS FOR SMART CITIES
at ICISRES-2K19 held on 07th & 08th March, 2019 organized by Departments of Computer Science and Engineering, Electrical and Electronics Engineering, Electronics and Communication Engineering & Master of Computer Applications in association with the Institution of Engineers (India), Salem Local Centre, Salem and International Journal of Computer Applications (IJCA).

P. Manimekalai
Dr.P.Manimekalai
Convener

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In Association with

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Certificate of Participation

This is to certify that

E.Vani

K.S.R. College of Engineering

has presented a paper on

Groundnut harvester

@

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held on 22nd March 2019 @
Nandha Engineering College (Autonomous), Erode, Tamilnadu, India.

Chair Person

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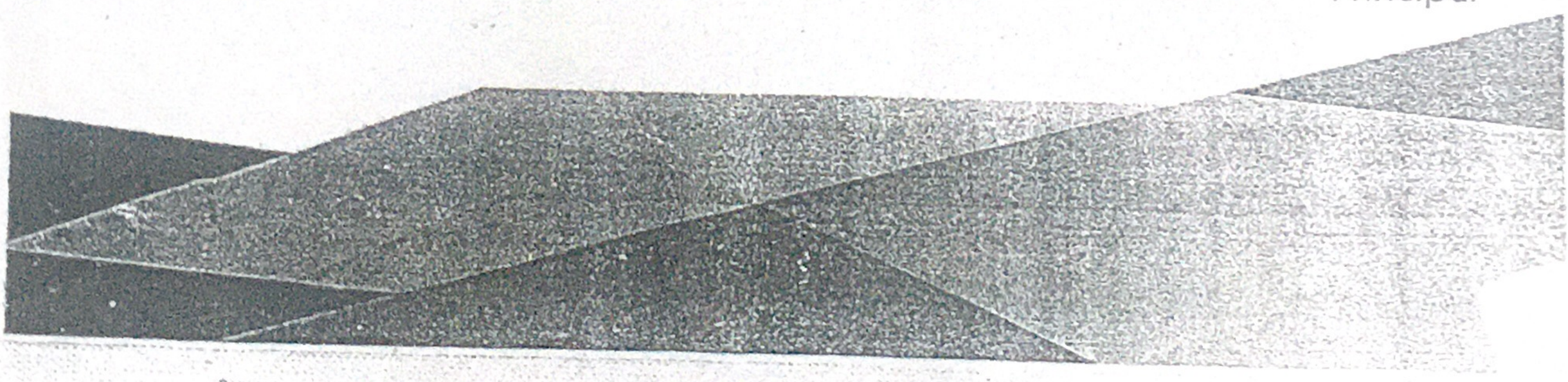

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6th National Conference

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This is to certify that Dr./~~Prof./Mr./Ms~~..... MAHESWARI. A / ASSISTANT PROFESSOR

K.S.R COLLEGE OF ENGINEERING *.....has participated and presented a paper entitled*

IOT BASED LOAD SHARING AND POWER MANAGEMENT

in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019.

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6th National Conference

on

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This is to certify that Dr./Prof./Mr./Ms. SORNALATHA M ASSOCIATE PROFESSOR

K.S.R COLLEGE OF ENGINEERING *has participated and presented a paper entitled*

TWO WAY SIGN LANGUAGE COMMUNICATION USING SMART GLOVE

in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019

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This is to certify that

C.Gowri Shankar

K.S.R. College of Engineering

has presented a paper on

Automated Feeding and Watering System for Farmyard

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Certificate

This is to certify that Mr./Ms./Dr. R. SANKAR GANESH *from* KSR COLLEGE OF ENGINEERING *has Presented the paper* DEVELOPE A COCONUT TREE CLIMBING AND HARVESTING MACHINE *in the International Conference on "Recent Trends in Engineering, Science and Technology", held on 2nd March - 2019.*

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Certificate of Participation

This is to certify that

A.Vasanthi

K.S.R college of Engineering

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Robotized Arecanut Tree Climber And Pesticides Sprayer

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This is to certify that Mr/Ms./Dr. A. VASANTHI *from* KSR COLLEGE OF ENGINEERING *has Presented the paper* ROBOTIZED ARECANUT TREE HIKER AND PESTICIDES SPRINGLER *in the International Conference on "Recent Trends in Engineering, Science and Technology", held on 2nd March - 2019.*

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International Conference on Information Sciences and Renewable Energy Sources (ICISRES - 2K19)

Certificate of Participation

Mr/Mr/Mrs/Dr. M. VIJAYAKUMAR

of K.S.R. COLLEGE OF ENGINEERING

has presented a paper entitled IOT BASED AUTOMATIC

VEHICLE PARKING SYSTEM MOBILE APPLICATIO

at ICISRES-2K19 held on 07th & 08th March, 20

Organized by Departments of Computer Science and Engineeri
Electrial and Electronics Engineering, Electronics and Communicat
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and International Journal of computer Applications (IJCA).

P Manimekalai
Dr.P.Manimekalai
Convener

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7th International Conference

on

Advanced Science and Engineering Research

(ASER-2018)

Certificate

This is to certify that ....M.:.VIJAYAKUMAR.....ASP/EEE.....

.....K.S.R....COLLEGE....OF.....ENGINEERING..... *has*

Participated / Presented a paper entitled.....GENERATOR.....

....PROTECTION.....USING.....MULTI-.FUNCTION.....DIGITAL...

...RELAY.....

in the 7th International Conference on Advanced Science and Engineering

Research (ASER-2018) organized by the Departments of CIVIL, CSE, ECE,

EEE, MECH and S&H on 5th April 2018.

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School of Engineering

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Satellite Campus, Iyya Avinashilingam Nagar, Varapalayam, Thadagam P.O., Coimbatore-641 108, Tamil Nadu, India.

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Certificate of Participation

This is to certify that Dr./Mr./Ms. J. Thiyagarajan, K.S.R college of Engineering, Tiruchengode has participated and presented a paper on Real time bus arrival monitoring system for Central bus station using LORA in the two day International Conference on 'EMERGING TRENDS IN WIRELESS COMMUNICATIONS, SIGNAL PROCESSING AND NETWORKING' held on 07.03.2019 and 08.03.2019 at School of Engineering Campus, Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore.

Dr.R.Sudarmani & Mrs. R.Chitra
Co-ordinators

Dr.B.Bargunam
Head / Department of ECE
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NATIONAL CONFERENCE
ON
ADVANCED CONSTRUCTION & SUSTAINABLE ENERGY SOURCES

NCACSES-2K19

Certificate of Participation

Mr/~~Ms/Mrs/Dr~~ M. SUBRAMANI of K.S.R College of Engineering presented a paper entitled Hybrid Energy Harvesting System For Charging Stations

at NCACSES-2K19 held on 15th & 16th March 2019 organized by Storm Association of Department of Civil Engineering and International Research Journal of Engineering and Technology (IRJET).

V.

Mr.V.Prabhu
Convener

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Principal

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6th National Conference

on

EMERGING TRENDS IN ENGINEERING & TECHNOLOGY

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./Prof./Mr./Ms..... SENTHILKUMAR.S / ASSISTANT PROFESSOR.

K.S.R. COLLEGE OF ENGINEERING *.....has participated and presented a paper entitled*

BORDER ALERTING SYSTEM FOR FISHERMAN USING LORA

in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019.

Convener

Principal

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CEO

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3rd INTERNATIONAL CONFERENCE ON RECENT TRENDS IN ENGINEERING, SCIENCE AND TECHNOLOGY

ICRTEST'19

Certificate

This is to certify that Mr./~~Ms./Dr.~~ E. KANNAN, *from* KSR COLLEGE OF ENGINEERING *has Presented the paper* DESIGN AND IMPLEMENTATION OF WEEDING AGRICULTURE ROBOT *in the International Conference on "Recent Trends in Engineering, Science and Technology", held on 2nd March - 2019.*

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6th National Conference

on

EMERGING TRENDS IN ENGINEERING & TECHNOLOGY

CERTIFICATE OF PARTICIPATION

This is to certify that ~~Dr./Prof./Mr./Ms.~~ GOWTHAM. S / ASSISTANT PROFESSOR

K.S.R. COLLEGE OF ENGINEERING has participated and presented a paper entitled

RAILWAY TRACK PEDESTRIAN CROSSING USING MOBILE PLATFORM

in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019.

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SRM TRP ENGINEERING COLLEGE

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International Conference on Innovative Engineering Initiatives (ICIEI - 2019)

Certificate

This is to certify that the following paper has been presented in the" International Conference on Innovative Engineerin Initiatives " (ICIEI - 2019) held during 13th & 14th March 2019.

Title of the Paper : INVESTIGATION OF DENOISING PERFORMANCE OF ADVANCED BM3D-DOUBLE CONVOLUTIONAL LAYER NEURAL NETWORK STRUCTI

Author : Dr. GOWRI SHANKAR CHINNASAMY

K.S.R COLLEGE OF ENGINEERING

Prof. S. PALANIYAPPAN
Coordinator

Dr. M. PRABHAKAR
Organizing Secretary

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Koneripalli, HOSUR - 635 117.

Department of Electrical & Electronics Engineering

IEEE

in Association with

National Conference on

EMERGING TRENDS IN RENEWABLE ENERGY, POWER QUALITY & OPTIMIZATION TECHNIQUES (ETREPQOT-2K19)

Certificate

This is to certify that Mr./Ms. Dr. C. GOWRISHANKAR *of*

KSR COLLEGE OF ENGINEERING *has presented a paper entitled*

DENOISING OF RAIN STREAK HD VIDEOS USING HEVC IN CONVOLUTION NEUTRAL NETWORK

in the National Conference on "Emerging Trends in Renewable Energy, Power Quality & Optimization Techniques" held at Er. Perumal Manimekalai College of Engineering, Hosur on 25th February, 2019.

Convener

Principal

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6th National Conference

on

EMERGING TRENDS IN ENGINEERING & TECHNOLOGY

CERTIFICATE OF PARTICIPATION

This is to certify that Dr./~~Prof./Mr./Ms.~~ RAMESH...S.....PROFESSOR.....AND.....HEAD.....

K.S.R.....COLLEGE.....OF.....ENGINEERING.....*has participated and presented a paper entitled*

AUTOMATIC.....WATER.....AND.....PESTICIDE.....SPRAYING.....FARMBOT.....

in the National Conference on "Emerging Trends in Engineering and Technology" held on 16th March 2019.

Convener

Principal

Dr.M.Vijayakumar

CEO

Dr. S. Arumugam

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8th International Conference

on

Advanced Science and Engineering Research

(ASER-2019)

Certificate

This is to certify that Dr. S. RAMESH, Prof/EEE

K.S.R COLLEGE OF ENGINEERING *has*

~~*Participated*~~ */ Presented a paper entitled* AUTOMATED

PACKAGING MACHINE FOR RATION SHOP

in the 8th International Conference on Advanced Science and Engineering Research (ASER-2019) organized by the Departments of CIVIL, CSE, ECE, EEE, MECH and S&H on 23rd March 2019.

Organizing Secretary
Dr. G. Balaji

Co-Patron
Dr. A.M.J. Md. Zubair Rahman

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2019

K.S.R. COLLEGE OF ENGINEERING

TIRUCHENGODE-637 215

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DEPARTMENT OF MECHANICAL ENGINEERING

CERTIFICATE OF EXCELLENCE

ICSM 2K19

This is to certify that Dr./Mr./Mrs. S. SUGANYA

of K.S.R. COLLEGE OF ENGG. T-CODE.

has participated/presented a paper entitled Role of IOT in MECHANICAL and Manufacturing Engineering.

in oral/poster in the International Conference on Sustainable Materials (ICSM 2K19) held on 19th and 20th March 2019.

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PRINCIPAL

5

Comparative Analysis on Nonlinear Optical Property of 2- Amino 5- Chloropyridine Derivative Crystals

T.Jayanalina[1*], K SenthilKannan[2], R Ranadevan[2], P Birmanathan[3], Pager SahebRao B[4]

[1] Department of Physics, K.S.R. College of Engineering, Tiruchengode – 637 215, India

[2] Department of Physics, Edayathangudy GS Pillay College of Arts and Science, Nagappattinam, India 611002

[3]Bharathidasan Univ. Model College, Vedaraniyam.

[4]G E Society's N.B.Mehta Science College, Bordi Palghar Maharashtra 401701

Abstract:

The 2- amino 5- chloropyridine derivative crystals are grown by solution growth method. One of them is SHG and other is THG. NLO property is the predominant in case of materials especially crystals for which the frequency parameters are properly analysed and Second harmonic efficiency of powdered 2A5CPLTA is determined by Kurtz and Perry method and it is 1.2 times that of KDP. The third harmonic efficiency of powdered 2A5CPC is determined by Z - scan technique and the nonlinear parameters are calculated.

Keywords: Single crystal X-ray diffraction; Recrystallization process; Nonlinear optical properties; Z- scan technique.

1. Introduction

Materials exhibiting large optical nonlinearity are of great interest for applications such as frequency conversion, telecommunication, optical computing, optical information processing and high optical disk data storage [1- 3].

molecular ions with respect to their mass of the base and substitution of the 3,6-Dimethylphenanthrene are observed as peaks in the spectrum. The observed abundance of the suspected molecular ion must be corresponding to expectations based on the assumed molecule structure. The possible fragmentation is as shown in figure 5 according to the observed peaks in spectrum. The formula for present compound is deduced from the molecular mass separation with appropriate mass. Thus, the molecular structure is approved by the mass separation.

CONCLUSION

From the NMR chemical examination, it is very important to note that, the introduction of methyl groups as new substituent in a compound usually increases the lipophilicity (affinity to lipids or fats) of the compound and reduces its water solubility. This is sometimes used to improve the ease of absorption of a substance into a biological membrane. The molecular structure is approved by the mass separation. From this streamline increment of the parameters in thermodynamic analysis showed that, the compound received the thermal energy up to 1000K and the molecular dissociation taking place continuously.

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20

SPECTRAL INVESTIGATION AND OPTIMIZED BOND PARAMETERS OF ATC USING COMPUTATIONAL CAPTIVITY

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ABSTRACT

In this effort of research work of Acetone thiosemicarbazone-ATC is reported. The FT-IR, FT-Raman, FT-NMR and UV-Visible spectra have been recorded in specified region. The optimized inducement of NLO activity by the molecular structural deformation due to the addition of acetone compound has been investigated. The isotropic and anisotropic chemical shift related to carbons and hydrogens after the formation of target compound have been carefully interpreted. The stabilization of orbitals by interchanging of energy between donor and acceptor was observed by NBO perturbation calculations.

Key words: Acetone thiosemicarbazone - ATC, Optical activity

INTRODUCTION

Molecular materials especially, organic materials with nonlinear optical (NLO) properties are presently attracting considerable interest because of their potential applications in the optoelectronic devices of data communications, information storage, optical computing, signal processing [1-2] and terahertz (THz) wave generation [3]. At present, a wide range of stabilized HOMO (Donor) and LUMO (acceptor) substituted organic compounds are being investigated to emphasize the relationship between molecular structure and non linear response. Especially organic structures with large delocalized ð-systems are more easily affected by an external optical field as they are relatively loosely bound to the nucleus, and that the delocalized orbitals may be extended over the entire molecule giving large and fast polarization [4-5]. These delocalized π systems results spatial asymmetry of

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Date: 16th-17th November 2018 | Venue: Colombo, Sri Lanka

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TABLE OF CONTENTS

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BOTTOM ASH BASED GEOPOLYMER CONCRETE PAVER BLOCKS

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Abstract— A study on bottom ash based geopolymer concrete (BAGPC) for paver block was attempted in the present work. Bottom ash was used as the source material. The alkaline liquid was a combination of sodium silicate and sodium hydroxide. Optimum mix design for M30, M35, M40, M50 and M55 grade were arrived based on alkaline liquid to solids ratio, molarity of sodium hydroxide and curing mode. Properties such as compressive strength, split tensile strength, flexural strength, water absorption and abrasion resistance of BAGPC paver block was determined. Further, durability studies on bottom ash geopolymer mortar were carried out against chemical resistance. The results showed that lower grade BAGPC paver block had attained required strength at the age of 3 days under ambient curing mode while higher grade BAGPC paver block achieved at the age of 28 days under heat curing mode. The water absorption of BAGPC paver block was lower for all the grades. It was also found that BAGPC paver block had excellent resistance against abrasion and chemical environment.

Index Terms— bottom ash, geopolymer concrete, paver blocks, abrasion resistance, chemical resistance

I. INTRODUCTION

Cement manufacturing is an energy intensive process and releases a large amount of greenhouse gases into the atmosphere. As per the statistical data, cement industry contributes about 7% weight of the total carbon dioxide emissions [1-2]. Therefore, meticulous attempt is being taken by several researchers to develop alternative cementing materials instead of Portland cement. Geopolymer binder is one such alternative binder to cement which is synthesized by mixing aluminosilicate material and high alkali solutions. It utilizes pozzolanic materials such as fly ash, GGBS, metakaolin etc., as aluminosilicate source to react with high alkali solutions of sodium or potassium based. Geopolymers have many advantages such as good compressive strength and resistance to aggressive environment and long term durability [3-4].

Fly ash and bottom ash produced during the burning of coal in thermal power plant causes severe environment pollution in its disposal. Fortunately, coal fly ash is well acknowledged for several applications in construction industry owing to its beneficial properties.Use of fly ash as a supplementary material in cement concrete and in geopolymer concrete is abundantly available. While fly ash is extensively used by-product in the

construction field, ample utilization of bottom ash is very much limited.

Bottom ash possesses almost similar chemical composition of fly ash especially rich in silica and alumina content However, bottom ash is a porous, glassy, dark gray material with a grain size similar to that of sand (5-12). Being coarser, bottom ash as such cannot be used directly as a source material in geopolymer concrete. Fine bottom ash produces good strength than medium and coarse bottom ash. The strength of bottom ash geopolymer mortar progresses with the addition of small amount of flue gas desulfurization gypsum. Larger particle size reduces the dissolution of bottom ash in activator solution for this reason it does not take part in the reaction [13-16].

The concentration of NaOH solution is directly affecting the dissolution of the aluminosilicate material and thereby it affects the formation of the geopolymer framework. To attain a better dissolving ability in aluminosilicate particulates, a higher concentration of NaOH solution is required [17-19]. Higher concentration of sodium hydroxide seems to favor the corrosion of the glassy membrane and lead to higher compressive strength (20). Longer curing period and higher temperature improves the strength of the geopolymer concrete [21-24]. In contrast, few researchers mentioned that geopolymer concrete cured under ambient temperature is also feasible to produce the desirable compressive strength [25-28].

In the meantime, geopolymer precast concrete products such as culvert, sewer pipes, railway sleepers and wall panels are commercialized]29-33]. Moreover the study on geopolymer concrete paver blocks is very few. Paver blocks are widely used construction material. They are primarily investigated for low traffic volume to heavy volume traffic. A combination of bottom ash -GGBS geopolymer paver blocks for M30 and M35 grade revealed that compressive strength was achieved under ambient mode curing at 3 days [34]. The mixture of red mud - fly ash geopolymer concrete paver blocks