



Dinkarrao K. Shinde Smarak Trust's
Dr. A.D. Shinde College of Engineering
Guddai, Bhadgaon, Tal: - Gadhinglaj, Dist: - Kolhapur



3.2.1 Number of research papers published or of workshops/seminars/conferences including programs

Sr.No	Name of Activities	Academic Year
1	Automated Emergency Braking System	2023-24
2	Design & Fabrication Of Multipurpose Agricultural Robot	2023-24
3	Gearless Power Transmission	2023-24
4	Design And Fabrication Of Ball Joint & Lever In Cashew Nut Shelling Machine	2023-24
5	Design And Fabrications Of Motorized Multipurpose Machine	2023-24
6	Automatic Handbrake System	2023-24
7	Sun Tracking Solar Panel	2023-24
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9	Industrial Automation Using Cellphone	2023-24
10	Analysis And Design Of Rotating Bridge To Provide Easy Access For	2023-24
11	Partial Replacement Of Sand By Glass Powder	2023-24
12	Utilization Of Waste Material In Road Sub Grade For Stabilization Of Soil	2023-24
13	Development Of Ai Based App For Construction Planning Management System	2023-24
14	Experimental Study On Bubble Deck Beam Using Hdpe Ball	2023-24
15	Flow Analysis Of River Using Hec-Ras Software.	2023-24
16	Comparative Study On Enhancement Of Concrete Using Rubber Crumb, Magnetized And Normal Water	2023-24
17	Stress Analysis Of High Speed Turbomachine	2023-24
18	Static And Dynamic Analysis Of Hcr Spur Gear Drive Using Finite Element Analysis	2023-24
19	Fem Analysis For Wedm Process	2023-24
20	Modernistic Waste Water Soakaway	2023-24
21	Discrete Wavelet Transform with Thresholding: An Effective Speech De-Noising Algorithm	2023-24
22	Enhancement of Power System & Control By Implementation of FACTS Devices	2023-24
23	Lifting Trolley for Easy Mounting	2023-24
24	Comparative Study of Steel Connection Using US & IS Code on TEKLA Structure	2023-24
25	Soil Stabilization by Using Lime & Fly Ash	2023-24
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27	Proposed By Disposal of Municipal Solid Waste By BIO	2023-24
28	Analyse The Effect of Use of Plastic Waste In Bituminous Mixture On Its Strength & Other Properties	2023-24
29	Design & Performance Analysis of Passive Solar Energy Building	2023-24
30	Use of Waste Plastic With Bacterial Coating as a Sustainable Building	2023-24
31	Different Techniques of Chronic Disease Detection using Machine Learning: Survey	2023-24



3.2.1 Number of research papers published or of workshops/seminars/conferences including programs 2023-2024

Sr. No.	Title of paper	Name of the author/s	Name of journal	Year of publication	ISSN number
1	Automated Emergency Braking System	Prof. Kishor S. Joshi, Dhiraj Shinde, Shital S patil, Rohid D khapare, Niranjana P parit, Suraj m Shinde	International Journal Of Emerging Technologies And Innovative Research	2023	ISSN:2349-5162
2	Design & Fabrication Of Multipurpose Agricultural Robot	Prof. Gururaj M. Kumbar, Sushant R Hiremath, Vishal m Chunari, Deepak D Helve, Amitkumar M Bidre, Bharamana A jadhav	Journal Of Emerging Technologies And Innovative Research	2023	ISSN:2349-5162
3	Gearless Power Transmission	Prof. Gururaj M. Kumbar, pandurang Morbale, Aniket Dhere, Santosh Niungare, Sumit navale, manjunath Magdum	Journal Of Emerging Technologies And Innovative Research	2023	ISSN:2349-5162
4	Design And Fabrication Of Ball Joint & Lever In Cashew Nut Shelling Machine	Prof. Aniruddha S. Bhoi, hemant Prakash Savant, Avinash Ananda kamble, Akshay Vijaykumar Mali, Tanveer Khutbuddin Kundargi, Umesh Ramesh jagtap	Journal Of Emerging Technologies And Innovative Research	2023	ISSN:2349-5162
5	Design And Fabrications Of Motorized Multipurpose Machine	Prof. Aniruddha S. Bhoi, pradip V Gawade, Abhishek S Bokmurkar, Suryakant T Parale, Shridhar H patil, Pravin R yadav	Journal Of Emerging Technologies And Innovative Research	2023	ISSN-2349-5162
6	Automatic Handbrake System	Prof. Pravin M. Kokitakar, Sudarshan S Sakhare, Jafar M Takildar, Santosh N Kole, Sachin S Sakhare, Moreshwar A Gondkar	Journal Of Emerging Technologies And Innovative Research	2023	ISSN-2349-5162
7	Sun Tracking Solar Panel	Prof. Kishor S. Joshi, Amar Bote, Rohit Gundulkar, Vaibhav Patil, Sulaiman basha	Journal Of Emerging Technologies And Innovative Research	2023	ISSN-2349-5162
8	Agricultural Robot	Prof. Shripad P. Bagadi, laxmi Jangali, Ramnath Gojgekar, Sourabh katkar, Rajdeep Desai, Akash Patil	International Journal Of Advances In Engineering And Management	2023	ISSN: 2395-5251



9	Industrial Automation Using Cellphone	Prof. Shripad P. Bagadi, Suraj Shetty, Avadhoot B Desai, Rushikesh D Sorate, Priyanka S Shinde, Pooja M Magdum	International Journal Of Emerging Technologies And Innovative Research	2023	ISSN : 2349-5162
10	Analysis And Design Of Rotating Bridge To Provide Easy Access For Roadway And Water Way	Prof. D. S. Khorate, Dnyanadeep patil, Ankush Patil, Pradip Patil, Pradip Sutar, Omkar Sutar	International Journal Of Scientific Research In Engineering And Management	2023	ISSN: 2582-3930
11	Parcial Replacement Of Sand By Glass Powder	Prof. S. R. Wadgule, Vikas Ambi, Aknaksha Pednekar, Omkar Sutar, Sidhagonda Patil	International Journal Of Scientific Research In Engineering And Management	2023	ISSN: 2582-3930
12	Utilization Of Waste Material In Road Sub Grade For Stabilization Of Soil	Prof. V. C. Chougale, Rabade Sourabh, Ghatage Shubham, Patil Aniket, Gongane Shubham, Patil Sourabh,	International Journal For Research In Applied Science And Engineering Technology	2023	ISSN:2321-9653
13	Development Of Ai Based App For Construction Planning Management System	Prof. Vaibhavee V. Chougale, Vishal S Arekar, Vishvajeet V Belekar, Omkar Salavi, Digambar C Gore, Pathamesh Shinde	International Journal Of Emerging Technologies And Innovative Research	2023	ISSN : 2349-5162
14	Experimental Study On Bubble Deck Beam Using Hdpe Ball	Prof. D. S. Khorate, Saurabh Patil, Prashant Patil, Aniket Farakte, Sachin Kamble	International Journal Of Scientific Research In Engineering and Management	2023	ISSN:2582-3930
15	Flow Analysis Of River Using Hec-Ras Software.	Prof. pooja Hireholi	International Journal Of Research And Analytical Reviews (Ijrar.Org)	2023	ISSN 2349-5138
16	Camparative Study On Enhancement Of Concreat Using Rubber Crumb, Magnetized And Normal Water	Prof. R. V. Savyanavar, Bhalchandra Namdev kapase, Aniket Ananda Kurane, Omkar Ananda Chavan, Shubham Shantaram Patil	International Journal Of Scientific Research And Development	2023	ISSN:2321-0613
17	Stress Analysis Of High Speed Turbomachine	Prof. Srinath Ingale, Satyajit kadam, Vishwajeet Kamble, Gaurav Kamble, Raj Kamlakar, Abhishek Pujari	International Research Journal Of Modernization In Engineering Technology And Science	2023	ISSN: 2582-5208
18	Static And Dynamic Analysis Of Hcr Spur Gear Drive Using Finite Element Analysis	Prof. Srinath Ingale, Yogesh Bondage, Shripad Patil, Shubham Patil, Bharamappa patil, Mahesh Chavan	International Research Journal Of Modernization In Engineering Technology And Science	2023	ISSN: 2582-5208



19	Fem Analysis For Wedm Process	Prof. Srinath Ingale, Swapnil Narvekar, Avadhoot Patil, Vivek Mane, Sagar More, Raj Karade	International Research Journal Of Modernization In Engineering Technology And Science	2023	ISSN: 2582-5208
20	Modernistic Waste Water Soakaway	Prof. Pooja Hireholi, Prof. Vaibhavi Chougule, Prof. Priyanka Telvekar	Nternational Journal Of Creative Research Thoughts - Ijcr	2023	ISSN 2023 - 2882
21	Discrete Wavelet Transform with Thresholding: An Effective Speech De-Noising Algorithm	Dr. Vireshkumar G. Mathad et.al	SSRG International Journal of Electrical and Electronics Engineering	2023	ISSN: 2349-8379
22	Enhancement of Power System & Control By Implementation of Fact Devices	Dr. Vireshkumar G. Mathad et.al	Journal of data acquisition & processing	2023	ISSN:1004-9037
23	Lifting Trolley for Easy Mounting	Prof. Gururaj M. Kumbhar, Akash Pandurang Bhiungade, Atul Baburav Gurav, Suraj balkrishna Daphale	Journal Of Emerging Technologies And Innovative Research	2024	ISSN-2349-5162
24	Comparative Study of Steel Connection Using US & IS Code on TEKLA Structure	Prof. A.S. Madakari, Ritesh A. Matiwadd, Prithviraj M. Rane, Ritesh S. Bhadekar, Amit A. Sarnaik, Sumedh B. Kamble,	International Journal of Scientific Research in Engineering and Management (IJSREM)	2024	ISSN: 2582-3930
25	Soil Stabilization by Using Lime & Fly Ash	Prof. Rohit Vijay Savyanavar, Kalyani Dilip Bhoi, Prajakta Parasharam Desai, Aarati Ashok Kambale, Madhumati Raghunath Patil	International Journal of Research in Engineering, Science and Management	2024	ISSN (Online): 2581-5792
26	Comparison of Different Building Materials for Enhancement of Building Comfort	Prof. S. R. Wadagule, Shubham T. Kurade, Vikas D. Kambale, Pratiraj P. Patil, Somanath B. Ranmale, Pavan M. Tepugade	International Journal of Scientific Research in Engineering and Management	2024	ISSN: 2582-3930
27	Proposed By Disposal of Municipal Solid Waste By BIO METHANATION In Gadhinglaj City	Mr. M. Saad M. Niyazi, Mr. Omkar S. Musale, Mr. Rhushikesh S. Gavali, Mr. Devraj V. Gurunak, Mr. Jamir M. Tahasiladar	International Journal of Research in Engineering, Science and Management	2024	ISSN (Online): 2581-5792
28	Analyse The Effect of Use of Plastic Waste In Bituminous Mixture On Its Strength & Other Properties	Prof. D. S. KHORATE. Mr. AMOL N. GURAV, Mr. SURAJ V. HIREMATH, Mr. SUDEEP M. HULAGABALI, Ms. MINAXI M. ASWALE, Ms. MILAN M. ASWALE	International Journal of Scientific Research in Engineering and Management (IJSREM)	2024	ISSN: 2582-3930



29	Design & Performance Analysis of Passive Solar Energy Building	Prof. P.R. Telvekar, Mr. Prasad S. Kumbhar, Ms. Prajta D. Desai, Ms. Snehal A. Redekar, Mr. Prasad P. Kumthekar	International Journal of Research in Engineering, Science and Management	2024	ISSN (Online): 2581-5792
30	Use of Waste Plastic With Bacterial Coating as a Sustainable Building Material In Concrete	Prof. V. S. PATIL Mr. Karna More, Mr. Harish Haramalkar, Mr. Shubham Patil, Mr. Maruti Naik, Mr. Appaso Patil	International Journal of Research in Engineering, Science and Management	2024	ISSN (Online): 2581-5793
31	Different Techniques of Chronic Disease Detection using Machine Learning: Survey	Mahesh Kakasaheb Hasabé, Kishor Mane	Journal of Emerging Technologies and Innovative Research	2024	ISSN-2349-5162





Automated Emergency Braking System

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Abstract: LC Engines have been superior a lot such that its velocity is turning into a primary catastrophe. Advanced computerized braking device improves braking methods in vehicles. It adjusts entire braking structures in an automobile and offers with the thinking Of Automatic Braking System giving the solution.

This undertaking is designed with ultrasonic transmitter, ultrasonic receiver, Arduino UNO R3 board With PIC microcontroller, DC equipment motor, Servomotor and mechanical braking arrangement. The Ultrasonic Sensor generates (0.020-20)KHZ frequency signal. It is transmitted via ultrasonic transmitter. The ultrasonic receiver is used to obtain the mirrored wave current in the front Of the vehicle, then the mirrored waves is given to the ultrasonic wave generator unit in which the incoming wave is amplified and in contrast With reference alerts to hold a regular ratio and this sign is given to microcontroller and thru which the working of DC tools motor and Servomotor may additionally takes place, which effects in software of brakes.

The prototype has been organized depicting the technological know-how and examined as per the simulated conditions. In future the proper mannequin might also be developed relying on its feasibility

Index Terms – Emergency, Automated, Braking, Brake, Automatic.

I. INTRODUCTION

Driving is a frequent undertaking for most of the people. The range of automobiles is growing day by way of day. Now a days, the science has acquired giant modifications which leads amplify in speed. The pace performs a essential position to preserve time for longer distances. But, this velocity additionally getting a predominant hassle for motives of street accidents. The frequent braking is no longer adequate for avoidance of accidents when driver is now not active. Further enchancement has to carried out in braking gadget in order to brake a car when driver is now not in a position to brake i.e., it may additionally desires computerized braking system. This computerized braking gadget permits the car to brake except assist Of the driver.

The predominant target Of the ultrasonic braking device is that, cars need to routinely brake when the sensors feel the obstacle. This is a science for motors to feel an impending ahead collision with every other car or an obstacle, and to brake the automobile accordingly, which is finished via the braking circuit. This machine consists of two ultrasonic sensors viz. ultrasonic wave emitter and ultrasonic wave receiver. The ultrasonic wave emitter supplied in the front component Of an automated braking machine vehicle, producing and emitting ultrasonic waves in a predetermined distance in the front Of the vehicle. Ultrasonic wave receiver is additionally furnished in the front component of the vehicle, receiving the mirrored ultrasonic wave sign from the obstacle. The mirrored wave (detection pulse) is measured to get the distance between car and the obstacle. The DC tools motor is related to the wheels of automobile and electricity enter is given to it from Arduino board. Then PIC microcontroller is used to manipulate the servo motor based totally on detection pulse statistics and the servo motor in flip robotically controls the braking of the vehicle. Thus, this new device is designed to resolve the trouble the place drivers might also no longer be in a position to brake manually precisely at the required time, however the automobile can Stop routinely by way of sensing the boundaries to keep away from an accident.

In order to limit the emission Jewels, extra work is going on for the amendment of engine work features and all. There are countless types Of braking mechanism structures that would solely can be relevant mechanically, to cross the ideology extra deep and short the computerized braking gadget will be greater ample and first-rate in addition to mechanical braking system.

In existing generation, wide variety Of motors are coming into existence With more moderen applied sciences for implementation of human remedy and different conditioning. To prolong the ideology in greater quick manner and to take the Step in exclusive way, may additionally automated braking device would fulfill the strategies of extension of technical existences.

II. OBJECTIVES

The goal of this venture is to diagram the computerized braking machine in order to keep away from the accident. To increase a protection car braking gadget the usage of ultrasonic sensor and to format a automobile with much less human interest to the driving.

This challenge is imperative to be connected to each vehicle. Mainly it is used when power the cars in night time time. Mostly the accident passed off in the night time time due to lengthy journey the driver may additionally get tired. So the driver may also



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Design & Fabrication of Multipurpose Agricultural Robot

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Abstract: This strategy is on the designing of agricultural robotic for a variety of tasks. Certainly robots are taking part in an vital function in the area of agriculture for farming manner autonomously. In agriculture, the probability for robotic is improving the productiveness and the robots are performing in the subject in massive number. The proposed machine focuses on imposing all the farming technique mainly in the subject of ploughing and seeding by using the use of microcontroller, Bluetooth models, a number sensors etc.. In a continuation, the relaxation of last manner ought to be carried out automatically. In latest years the improvement of the self reliant automobiles in the agriculture has skilled greater interest. This robotic will assist the farmers in doing the farming manner greater accurate. The robotic is a mechanical machine which is succesful of performing quite a number duties besides human intervention. The robotic works based totally on command given by means of the controller. Various sensors are used for sensing a number of parameters alongside the robotic path. The microcontroller being the coronary heart of the robotic gadget manipulates whole the motion of the robotic system. It additionally controls a wheel action through controlling the DC motors. Motor using circuit is used to power the DC motors which in flip manage the wheel motion. The seeding robotic for agricultural cause is an self reliant robotic which is managed remotely via a wi-fi Bluetooth connectivity between the Smartphone and the robot. The Bluetooth electronics app is used to function the robot. It is used to manage every and each and every operation of the robot.

Index Terms – Agriculture, Robot, Multipurpose

I. INTRODUCTION

Agriculture is the spine of India. The records of Agriculture in India dates returned to Indus Valley Civilization Era and even earlier than that in some components of Southern India. Today, India ranks 2d global in farm output. The distinct motors play a foremost position in a variety of fields such as industrial, medical, army functions etc. The distinctive car subject are step by step growing its productiveness in agriculture field. Some of the primary issues in the Indian agricultural are rising of enter costs, availability of expert labors, lack of water sources and crop monitoring. To overcome these problems, the automation applied sciences had been used in agriculture. The agricultural census offers critical data on the distribution of land holdings in our country. According to the census majority of the farmers are having the land much less than 1 hectare. This is one of the fundamental drawbacks for the mechanization in agricultural region in India. The automobiles are being developed for the tactics for ploughing, seed sowing, leveling, water spraying. All of these features have now not but carried out the use of a single vehicle. In this the robots are developed to pay attention in an environment friendly manner and additionally it is predicted to operate the operations autonomously. The proposed thought implements the car to function the features such as ploughing, seed sowing, mud leveling, water spraying. These features can be built-in into a single automobile and then performed.

Indian economic system is based totally on agriculture. The backbones for meals manufacturing are farmers. Traditionally farming is finished by means of human being with the assist of bullock carts, tractors and tillers etc. In modern-day era, the important trouble in agricultural area consist of lack of labor availability, lack of understanding concerning soil testing, make bigger in labor wages, wastage of seeds and greater wastage in water. To overcome all these risks the robotic for agriculture has been developed. The fundamental goal of agricultural robotic is making use of robotic technological know-how in agricultural field. The agriculture robotic effectively performs ploughing, seeding and mud leveling automatically. The robotic is a mechanical machine which is succesful of performing a number of duties barring human intervention. The robotic works based totally on command given through the controller. Various sensors are used for sensing a range of parameters alongside the robotic path. The microcontroller being the coronary heart of the robotic device manipulates whole the motion of the robotic system. It additionally controls a wheel movement by way of controlling the DC motors. Motor riding circuit is used to pressure the DC motor which in flip controls the wheel motion.

II. OBJECTIVES

1. This mission goal is to plan and fabricate a photo voltaic operated agricultural robotic which can operate the operations like,
 - Cultivating operation.



Gearless Power Transmission

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Abstract: The existing work by and large focuses on discovering an alternate alternative of tools drives for a number strength transmitting purposes in one-of-a-kind sectors. This mechanism is used as choice of bevel equipment for low price and low torque application. The effectivity of gears like bevel gear, spur equipment is much less due to collision and format is complicated as a end result it is costlier. The gearless elbow transmission is very low in cost as nicely an environment friendly and superb technique of up to 92% efficiency. This paper ambitions at a powerless transmission approach via the Elbow mechanism. Most elbow machines are constant role someplace (90 to a hundred and eighty degrees).

Today's world requires pace on every and each and every field. Hence rapidness and rapid working is the most important. Nowadays for reaching rapidness, a number of machines are manufactured through man. The engineer inconstantly conformed to the challenges of bringing thoughts and sketch in to reality. New machines and strategies are being developed always to manufacture more than a few merchandise at more cost-effective quotes and excessive quality. The mechanism "Gearless Power Transmission" is designed and manufactured for being compact, which is skillful and is having extra specific in transmitting energy at proper attitude besides any gears. The Working of this association is very easy & work efficiently with a very minimal quantity of electricity losses, which is skillful and is having some thing particular in transmitting electricity at proper attitude barring any gears being manufactured.

Index Terms – Gearless Transmission, Hub, Links Mechanism, Elbow Mechanism, Gearless.

I. INTRODUCTION

Today's world requires pace on every and each field. Hence rapidness and rapid working is the most important. Now a days for reaching rapidness, a number of machines and equipment's are manufactured via man. Engineer is continuously conformed to the challenges of bringing thoughts and diagram in to reality. New computing device and methods are being developed continually to manufacture more than a few merchandise at more cost effective prices and excessive quality. The assignment "GEARLESS TRANSMISSION" being compact and transportable equipment, which is skillful and is having some thing exercise in the transmitting energy at proper perspective besides any gears being manufactured. This venture offers us knowledge, experience, talent and new thoughts of the manufacturing. It is a working venture and having assurance of the success. El-bow mechanism is an ingenious hyperlink mechanism of slider and kinematic chain principle. This is additionally known as "gearless transmission mechanism" this mechanism is very beneficial for transmitting action at proper angles. However in sure industrial utility "gearless transmission at proper angle" can also work at obtuse or correct attitude aircraft can be in contrast to worm and worm equipment or bevel and pinion tools which are continually used in the enterprise for severa application. The foremost function for mechanism comparatively excessive effectivity between the enter and the output electricity shafts with regards to the tools efficiencies. The El-bow Mechanism transmits the I/P strength toward the O/P aspect such away that the angular Forces produced in the slacks are clearly transmitted with the assist of pins which takes up the I/P strength and the proper perspective pressure is transferred closer to the O/P slack and pin assembly. Hence very little friction performs whilst the strength is being transmitted; the Hunting and returned lash are absent. Therefore, it is 1 Mechanical tasks : Learnmech.com favored that effectivity as excessive as 90-92% are viable in equipment much less transmission mechanism.

The first utility of this mechanism was once made use of the "Big Ben Clock" having 4 dials on the tower of London. This clock was once set up someday between 1630-1635 AD and nonetheless it is functioning in desirable condition.

II. DESIGN, MECHANISM

At the commencing supply short introduction about content material of the chapter. The fabric chosen for any thing must

- be without difficulty available
- be succesful of being processed in the preferred emanations and





Design and Fabrication of Ball joint & Lever in cashew nut shelling machine

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Abstract: In India, this operation used to be beforehand and in most of the countries has usually been executed manually, which is nevertheless applicable to the small-scale processor, though the mechanization of shell remover method is beneficial choice in all cases. Oloso and Clarke (1993) stated distinctive strategies of shelling roasted nuts. In the Sturtevant system, roasted cashew nuts are thrown by way of centrifugal pressure on to a metallic plate for shelling. It resulted in terrible shelling efficiency. In the Oldsmar system, properly graded nuts are held by means of a nut-shaped blade and reduce alongside a herbal line. The potential of shelling is very low due to the fact every nut has to be positioned for cutting. In spite of these developments, at present shelling is broadly speaking carried out manually by using hitting the nut with a timber hammer alongside its longitudinal axis. Average shelling Capacity was once stated to be eight kg/day each worker, which consists of 36% whole, 30% Half-splits and 34% broken as mentioned by using (Jain, 1982; Kumar, 1989). Therefore, there is a want to strengthen a mechanical or mechanized cashew nut Sheller, which must be in a position to meet the vast vary of cashew nut shelling requirements, minimize the drudgery and enhance the high-quality of the product.

Index Terms – Ball Joint, Lever, Cashew, Shelling Machine.

I. INTRODUCTION

Cashew nuts are determined fluctuate frequently in Brazil. It has come in India 1/2 of sixteen century for the cause of forestation and soil conservation. The improvement of cashew nut shelling computing device perfect for cashew nut is to accommodate higher mechanism in order to keep away from important danger of spilling of liquid which reasons of pores and skin illnesses and bodily disability.

Present machineries are guide and semi-automatic which is bulky, highly-priced and irritating for processing. These reasons promote to construct a utterly computerized desktop which have to fulfill the all necessities of the farmers. This computer approves to atomization and reliability of the process. Processing of the uncooked nuts releases the spinoff CNSL that has industrial and medicinal applications. The cause of shelling is to produce clean, complete kernels free of cracks.

Morton, Julia F [1] has labored on the cashew seed and the cashew apple. The shell of the cashew seed yields derivatives that can be used in many functions from lubricants to paints. Cashew nut is determined very normally in Brazil, it has come in India in half of sixteen century for the reason of forestation and soil conservation. It is additionally made into cashew butter and nut milk, and used in baking and confectionaries (Davis, 1999, Rosengarten, 1984). Processing of the uncooked nuts releases the derivative CNSL that has industrial and medicinal applications

S.J.Ojolo et al. [2] has noted the ordinary technique of cracking roasted cashew nuts manually, the use of harmer or knife cutter is very labor-intensive, gradual and tedious; besides, most mechanical crackers do no longer supply pleasant effects in phrases of entire kernels percentage. A prototype computing device was once developed to crack roasted cashew nuts. Nuts get cracked through the affect of the lid in opposition to the feeding tray. The lid offers for a minimum clearance from the feeding tray on which nuts are preloaded; this prevents the utilized pressure in contrast is in extra of the required cracking force. The computing device used to be examined with quite a number cashew nut sizes, and placement orientations. The proportion of total kernels produced used to be round sixty seven %. The capability of the laptop was once estimated to be about 18.3 kg/hr.

II. OBJECTIVES

1. To limit the noise of joint with changing it by using ball joint.
2. To minimize the vibration at lever.
3. To enhance the effectivity of desktop through lowering vibrations.





Design and fabrications of Motorized Multipurpose Machine

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Abstract: Today in this world every task has been made quicker and fast due to technology. In every industry desire to make high productivity rate and maintain the standard of the product at low average cost. This dissertation deals with the design and fabrication of motorized multipurpose machine which perform three operations are namely drilling, cutting, grinding and Slotting. The motorized multi-operation machine contains three operation which is performed under single machine. It can be used in small scale industries and rural workshops to work upon thin metallic and on wood in carpentry shop.

The Multi-Purpose Mechanical Machine is widely used in manufacturing. Industries are primarily designed to provide usable goods and services at a cheap cost of production, low cost of machinery, and low cost of inventory. We are providing drive to the main shaft, which is directly coupled to the bevel gear mechanism; on the main shaft, we have used a bevel gear system for power transfer to three places. Drilling centre, cutting centre, and grinding centre will all be driven by bevel gear. Because it is driven by a single power source, the concept allows us to undertake operations at multiple working centres at the same time. Electricity conservation (power supply), cost savings related with power usage, increased productivity, and reduced floor space are all features of this strategy. The scotch yoke mechanism is used in this machine, which is autonomous and operated by an electric motor. It can be used to work on thin metallic sheets and wood in a carpentry shop in small size industries/workshops.

Index Terms – Multipurpose Machine, Motorized, Motor.

I. INTRODUCTION

This idea is for the "Multi-purpose Mechanical Machine" to be designed, developed, and manufactured. Multi-purpose mechanical machines are primarily utilised in small-scale companies. The industries are primarily geared on producing valuable goods and services at low production, machine, and inventory costs. Every activity in this world has become faster and faster as are technical growth, but this progress also necessitates significant investments and expenditures. In today's society, all actions have been accelerated due to technology advancement; however this advancement also necessitates significant investments and expenditures. Every industry aspires to achieve a high rate of productivity while maintaining product quality and standard at a low average cost. Machine installation accounts for a significant portion of a sector's investment. So, in this project, a work is proposed in which a machine is created to be capable of simultaneously doing operations such as drilling, cutting, and grinding at multiple work centres, implying that the Industrial will not have to pay a high price for the machine.

The reason to design a multi-operational mechanical machine is that there is no machine which can perform various operations (i.e. drilling, cutting, slotting & grinding) at the same time. This machine is operated by DC motor and uses a single slider mechanism and bevel gears. This model of the multi operation mechanical machine may be used in small scale industries dealing with light materials like wood, cardboard etc. and domestic purpose.





Automatic Handbrake System

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Abstract: Now a day's automatic hand brake release mechanism has been replaced by the manual hand brake release mechanism. This has taken up an additional use in control of the vehicle by no initiating a rear-wheel skid. The automatic hand brake release mechanism is one of the most effective hands braking system over the conventional systems. This type of mechanism provides totally lever-less operation which saves the effort as well as the space utilization of the vehicle. Generally the hand brake is manually operated whereas in our project work, we have developed an automatic handbrake release mechanism for safety purpose. The engagement and disengagement of the handbrake is done with the help of hydraulic actuators. Moreover when the ignition system is turned off, the solenoid switch gets in and the piston from master cylinder pressurizes the oil and then by the means of the hydraulic system it engages the handbrake mechanism.

Although sometimes it also known as an emergency brake, using it in any emergency whereas the footbrake is still operational is likely to badly upset the brake balance of the car and vastly increase the likelihood of loss of control of the vehicle, for example by initiating a rear-wheel skid. Additionally, the stopping force provided by using the handbrake is small and would not significantly aid in stopping the vehicle. The hand brake is instead intended for use in case of mechanical failure where the regular footbrake is inoperable or compromised. Modern brake systems are typically very reliable and equipped with dual-circuit hydraulics and low-brake-fluid sensor systems, meaning the handbrake are rarely used to stop a moving vehicle. Comparing with manual handbrake system it has a compact design as well as striking looks having more efficiency. The paper comprises of detail project about Design, Development and Analysis of automatic handbrake release mechanism with having various applications. Taking this criterion into consideration, project is explained along with results which shows how efficient are the automatic handbrakes.

Index Terms – Hand Break, Break, Automatic, Hand.

I. INTRODUCTION

The most important part in the automobile is the hand brake which is also known as a latching brake. It is used generally when the automobile is parked, thus the alternative name i.e. Parking brakes are used to keep the car stationary, also called automobile e-brakes. The most common use of a parking brake is to keep the vehicle motionless when it is parked. Car emergency brakes have a ratchet locking usually consisting of a cable directly connected to the brake mechanism that will keep them engaged until a release mechanism button is pressed by the driver.

Transmissions, this is usually used in concert with a mechanism that is often a hand-operated lever, on the parking pawl in the transmission. Automotive safety experts recommend the use of both systems to immobilize a parked car, and the use of both systems is required by law in some places yet many individuals use only the "Park" position on the automatic transmission and not the parking brake. It's similar with manual transmission cars: They are recommended to always be left with the handbrake engaged, in concert with their lowest gear (usually either first or reverse). The use of both systems is also required by law in some jurisdictions. However, when parking on level ground, many people either only engage the handbrake (gear lever in neutral), or only select a gear (handbrake released). If parking on a hill with only one system results in the car rolling and damaging the car or other property, insurance companies in some countries, for example in Germany, aren't required to pay for the damages.

Hand brakes are also used to assist in hill starts on vehicles with manual transmissions. Use of the handbrake frees both feet for use on the accelerator and clutch pedals, allowing the car to move off without rolling back at all. Our project comprises an electric circuit which consists of a microcontroller, stepper motor and two position sensors. After switching on the ignition and pressing the clutch pedal it automatically releases the hand brake & when the ignition switch turns off it automatically engages the hand brake.

Although generally called a hand brake, using it in any emergency wherever the footbrake continues to be operational is probably going to badly upset the brake balance of the automotive and immensely increase the probability of loss of management of the vehicle, for instance by initiating a rear-wheel skid. To boot, the stopping force provided by using the handbrake is tiny and wouldn't considerably aid in stopping the vehicle. The hand brake operates totally on the rear wheels that have reduced friction whereas braking however in some cases, hand brake operates on the front wheel, which wiped out most Citroens manufactured since the end of World War II. The emergency brake is instead supposed to be used just in case of mechanical failure wherever the regular foot brake is inoperable or compromised. Trendy brake systems are usually terribly reliable and equipped with dual-circuit hydraulics and low-brake-fluid sensing element systems, which means the handbrake is never accustomed to stop a moving vehicle. Conventional hand brake feat involves human interference. While not pulling or pushing the lever, the hand brake won't work.



SUN TRACKING SOLAR PANEL

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Abstract: Our task Sun Tracking Solar Panel will encompass the sketch and development of an Arduino-based photo voltaic panel monitoring system. Solar monitoring approves extra strength to be produced due to the fact the photo voltaic array is in a position to continue to be aligned to the sun. Solar strength is unexpectedly gaining reputation as an vital skill of increasing renewable strength resources. As such, it is critical that these in engineering fields apprehend the applied sciences related with this area.

This machine builds upon matters discovered in this course. The intention of the assignment is to maintain the photo voltaic photovoltaic panel perpendicular to the solar during the 12 months in order to make it extra efficient. The dual axis photo voltaic photovoltaic panel takes astronomical statistics as reference and the monitoring device has the functionality to continually factor the photo voltaic array towards the solar and can be established in a number of areas with minor modifications. The vertical and horizontal action of the panel is acquired with the aid of taking altitude attitude and azimuth attitude as reference. The Arduino has been used to manage the function of DC motors. The mathematical simulation manage of twin axis photo voltaic monitoring gadget ensures the factor to factor movement of the DC motors whilst monitoring the sun.

IndexTerms – Solar Panel, Panel, Tracking, Sun.

I. INTRODUCTION

With the speedy extend in populace and financial development, the issues of the strength disaster and international warming outcomes are nowadays a reason for growing concern. The utilization of renewable power sources is the key answer to these problems. Solar power is one of the foremost sources of clean, plentiful and inexhaustible strength that now not solely affords choice power resources, however also improves environmental pollution. Solar monitoring is the most gorgeous technological know-how to decorate the electrical energy manufacturing of a PV system. To reap a excessive diploma of monitoring accuracy, numerous methods have been broadly investigated. Generally, they can be labeled as both open-loop monitoring sorts based totally on photo voltaic motion mathematical fashions or closed-loop monitoring sorts the usage of sensor-based remarks controllers. In the open-loop monitoring approach, a monitoring system or manage algorithm is used. Referring to the literature, the azimuth and the elevation angles of the Sun have been decided by means of photo voltaic motion fashions or algorithms at the given date, time and geographical facts. The manipulate algorithms have been completed in a microprocessor controller. In the closed-loop monitoring approach, a range of energetic sensor devices, such as cost couple gadgets (CCDs) or light based resistors (LDRs) were utilized to experience the Sun's function and a remarks error sign was once then generated to the manipulate gadget to continually get hold of the most solar radiation on the PV panel. This paper proposes an empirical lookup method on this issue. Solar monitoring procedures can be applied with the aid of the use of single-axis schemes, and Dual-axis constructions for greater accuracy systems. In general, the single-axis tracker with one diploma of freedom follows the Sun's motion from the east to west at some point of a day whilst a dual-axis tracker additionally follows the elevation perspective of the Sun. In latest years, there has been a developing Volume of lookup involved with dual-axis photo voltaic monitoring systems.

However, in the present research, most of them used two stepper motors to function dual-axis

solar tracking. With two monitoring motors designs, two motors had been installed on perpendicular axes, and even aligned them in sure directions. In some cases, each motors may want to no longer pass at the identical time. Further more, such structures usually contain complicated monitoring techniques the use of microprocessor chips as a manage platform. In this work, using a dual-axis with solely single monitoring motor, an try has been made to increase and put into effect a easy and environment friendly manipulate scheme. The two axes of the Sun tracker have been allowed to pass concurrently inside their respective ranges.

Utilizing traditional digital circuits, no programming or laptop interface was once needed. Moreover, the proposed gadget used a stand-alone PV inverter to force motor and grant electricity supply. The device used to be self-contained and autonomous. Experiment effects have verified the feasibility of the monitoring PV gadget and proven the blessings of the proposed implementation. Man has wanted and used strength at an growing charge for his sustenance and well-being ever in view that he got here on to the earth a few million years ago. Solar electricity guarantees of turning into a reliable electricity supply. Besides any polluting effects. Solar power can be used each immediately and indirectly. It can be used without delay in a range of thermal functions like heating water or air, drying, distillation and cooking. The heated fluids can in flip be used for functions like

Agricultural Robot

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ABSTRACT:-

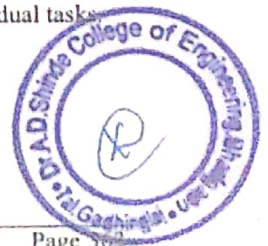
The utility of insecticides and fungicides is one of the most important approaches in agricultural manufacturing and can have a good-sized impact on crop yield, fine, and in the long-run profitability. It is anticipated that approximately 30-35% of crop losses can be avoided whilst dangerous bugs and sicknesses are removed via making use of insecticides. At present, there are extraordinary sorts of pesticides sprayer but the approach for pesticide utility is a manually lever-operated backpack kind sprayer. Farmers who are spraying pesticides are tormented by it which makes them extra at risk of their health, eyes and they will also broaden lumbar ache because of the burden of the sprayer. This paper proposes a remotely operated spraying robot designed to lessen the time, reduce labour costs and prevent human hazards involved in spraying potentially toxic chemicals.

1. INTRODUCTION:-

India is agrarian economies and most of rural populations depend on agriculture to earn their livelihood. The farming methods at present are manual or semi-automatic with high involvement of labourers. In the recent years, the number of labour availability is reducing continuously along with increase in their wages. There is a requirement of higher productivity. Hence the device is to be designed which helps farmers to overcome the stated problem. Automated Robots can provide us the solution

The main application of robots in the commercial sector has been concerned with the substitution of manual human labour by robots or mechanized systems to make the work more time

efficient, accurate, uniform and less costly. One may argue the social implications of such developments, for example, the effects on employment through loss of blue-collar jobs to the more efficient robotic counterpart; there are also ethical considerations that may be argued. Whilst there may well be some validity to the argument in some cases, this current project is unique in the number of stakeholders that are affected in a positive sense. The farmers benefits are found in more efficient maintenance of the crops and either less work for themselves or a decreased need for the employment of others (arguably, an expensive process). Increased demand on growers has begun to be met with increased specific automation in many fields, as producers believe that automation is a viable and sometimes necessary method to ensure maximum profits with minimum costs. Indeed, Hopkins argues that automation enables the expansion of a farm without having to invest more financial resources on labour. Merchants may benefit from increased sales due to a lower cost product; the consumers will benefit, likewise, from a lower cost product of comparable quality. The stakeholders that benefit most, at least from an ethical or social perspective, however, are the farm workers. This project presents the design and construction of an autonomous robot that seeks to address some of the human health concerns associated with farms. This robot is designed as a base for developing systems to enable the automation of farming processes such as the spraying of pesticides, picking of fruit and the caring for diseased plants. The system is designed to be as modular as possible, enabling the development and/or modification of any of the individual tasks.





INDUSTRIAL AUTOMATION USING CELLPHONE

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Abstract: Abstract: As the world is turning into extra technologically advanced, industrial automation turning into extra popular. Android is open-source software, producers can alter the working gadget for a unique application. This will become a less expensive and possible choice for the manufacturer, as hiring a software program business enterprise to do it. The Android platform helps the Bluetooth community stack, which permits a machine to wirelessly trade records with different Bluetooth devices. The software framework affords get admission to to the Bluetooth performance thru the Android Bluetooth. This paper is generally centered on the implementation of a prototype gadget for industrial home equipment manipulate like the velocity of DC motor, heating coil and mild depth the usage of Android cell & Bluetooth technology.

Index Terms – Cellphone, Automation, Industry.

I. INTRODUCTION

This task has integration of Android cellular technological know-how and embedded system. Android cellular consumer has to installation an utility on his/her cellular handset to manage the devices. Then he/she can supply command the use of the buttons on that application. For this you have to flip on the Bluetooth on mobile, so the predominant wi-fi controlling method used in this venture is Bluetooth technology. Bluetooth receiver will be linked to the project. This Bluetooth system is related to the circuit which has a decoder. It sends out a code for respective command despatched by way of user. Then the respective system linked to the circuit will be grew to become on or off relying on the command given. For instance flip on Fan, Turn off Fan. Turn on buzzer etc. Such that by means of giving commands from cellular you can manage industrial work

In speedy shifting world, time is most vital factor. You can flip on/off machine in the enterprise by means of giving command via phone phone. It will retailer time as nicely as manpower required to manage industrial devices. By the usage of key command on android cellular we can manage six devices. We can expand the quantity of devices. Most vital element about this venture is that it is managed the usage of an utility on android mobile. The man or woman who has mounted this utility on his/her android cellular can solely intervene in the controlling devices. Also it gets rid of the want of carrying a faraway manage to flip on/off the devices.

II. HISTORY

It was once yr 1969, and a group of Japanese engineers from the BUSICOM Company arrived to United States with a request that a few built-in circuits for calculators be made the use of their projects. The proposition used to be set to INTEL, and Marcian Hoff was once accountable for the project. Since he was once the one who has had trip in working with a pc (PC) PDP8, it came about to him to advise a essentially distinctive answer as a substitute of the recommended construction. This answer presumed that the feature of the built-in circuit is decided by means of a software saved in it. That intended that configuration would be simpler, however that it would require some distance greater reminiscence than the mission that used to be proposed via Japanese engineers would require. After a while, although Japanese engineers tried discovering an simpler solution, Marcian's concept won, and the first microprocessor was once born. In remodeling an concept into a readymade product, FredericoFaggin was once a essential assist to INTEL. He transferred to INTEL, and in solely 9 months had succeeded in making a product from its first conception. INTEL got the rights to promote this critical block in 1971.



Analysis And Design Of Rotating Bridge To Provide Easy Access For Roadway and Water Way

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Abstract - The available solutions are taking the overhead passenger bridge, walking to the end of the platform, crossing the railway track. The above-mentioned cases might be challenging to the elderly persons, people with disabilities and when the passenger is carrying heavy luggage. The present work deals with the study of platforms of Indian railways, identifying opportunities for facilities re-design for improved crowd management, passenger movement and comfort. A swing bridge mechanism is designed and developed using CAD modelling followed by a small scale working model, with a facility to provide temporary access to the platforms when there is no train available on the track. Our project aims at helping the railway administration to modify their facilities for better and easy flow of passenger.

Key Words: bridge, elderly persons, railways, administration crowd management

1. INTRODUCTION

Rotating bridge is a movable bridge that has as its primary structural support a vertical locating pin and support ring, usually at or near to its center of gravity, about which the turning span can then pivot horizontally as shown in the animated illustration to the right. Small swing bridges as found over canals may be pivoted only at one end, opening as would a gate.

In its closed position, a swing bridge carrying a road or railway over a river or canal, for example, allows traffic to cross. When a water vessel needs to pass the bridge, road traffic is stopped (usually by traffic signals and barriers), and then motors rotate the bridge horizontally about its pivot point. The typical swing bridge will rotate approximately 90 degrees, or one-quarter turn; however, a bridge which intersects the navigation channel at an oblique angle may be built to rotate only 45 degrees, or one-eighth turn, in order to clear the channel.

2. OBJECTIVE

1. To Study Design & Working Of Rotating Bridge.
2. To Study Rotating Bridge Types.
3. To Study The Material Used For Rotating Bridge.
4. To Determine The Tests Are Conducted On Material Which Are used For Construction Of Rotating Bridge.
5. To Study Analysis and design of rotating bridge to provide easy access for roadway and Water Way

3. LITERATURE REVIEW

(Roberts, C. L., Breen, J. E., & Kreger, M. E., 1993).

Since then, the vertical construction method has begun to be recognized. Germany has built a bridge spanning 150 m. In 2011, the concrete arch bridge in Kambara Valley, Japan, was built with a span of 135 m.

(Liu, J. P., Tsunornoto, M., & Kunihiioo, N., 2003). The cable-stayed bridge of the Danube Canal Bridge (55.7+119+55.7)m is located in Vienna Airport, Austria.

Sun, Q. S., Guo, X. G., Zhang, D. P., Guan, X. K., & Zheng, Y., 2011). (It was built in 1976 and is the first application of the horizontal rotation construction method of the bridge.

(Berger, I., Healy, D., & Tilley, M., 2013). The weight of the rotating body is about 4000 tons. After decades of development, the horizontal rotation construction technology has gradually matured, and the scope of application of the horizontal rotation construction method has not only increased, it has achieved some remarkable achievements. The bridge of the rotation construction method is only applicable to the arch bridge vertical

PARCIAL REPLACEMENT OF SAND BY GLASS POWDER

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Abstract - Concrete is an essential building material which is widely used in the construction of infrastructure such as building, bridges, highway, dams & many other facilities. The main natural and cheapest resource of sand is river. Dams are constructed on every river hence these resources are erasing very fast. Now a day's good sand is not readily available, it should be transported from long distance. Those resources are also exhausting very rapidly. So it is a need of the time to find some substitute to natural river sand. The artificial sand produced by proper machines can be a better substitute to river sand. The sand should be sharp, clean and coarse. The grains should be of durable

Material. The grain sizes must be such that it should give minimum voids. In this project we have made around 27 blocks having size 15*15cm. In that we replace sand by fine crushed powder of glass by percentage method (10, 20 & 30%) which is waste product from industries, land, general waste resources. Because of that there is lots of saving in the sand amount & we know that the glass is solid waste material which is available in large quantities in nature. So that we can minimize at least some amount of solid waste from nature. So that this project is Eco-Friendly because the material which we are using is easily available in nature.

Key Words: Bitumen, Plastic, Aggregate, Economical, Pavement, etc

1. INTRODUCTION

As a result of industrialization and urbanization it has been estimated that several million tons of waste glasses are generated annually worldwide. The prime sources of waste glasses are window screen, window glasses, tube lights, bulbs, electronic equipment, medicinal bottles and liquor bottles.

Most of the waste glass is sent to landfill because of impurities which are difficult to remove, prohibitive shipping costs to glass manufacturing plants, a mixed colour waste streams which are difficult to separate into useful raw glass stocks. As glass is not biodegradable, the wastes produced today will remain in the environment for hundreds and perhaps thousands of years. Waste glasses do not decompose easily by itself therefore do not provide environmental friendly solution and social impact after disposal. The use of the waste glass in the construction industry is among the most attractive option because it can consume a significant

quantity of these materials.

Now-a-days Government have put banned on dragging of sand from the river bed. Source of natural sand are very less so, By partial replacing natural sand to waste glass in concrete we are able to achieve waste material in an effective use. In this concrete, glass is used which is waste material from glass industries with cement, sand & aggregate in minimum proportion. The glass is being used for partial sand replacement in proportions 10%, 20%, 30%.

Therefore we have decided to recycle this waste product from civil engineering point of view as the construction material. Therefore we used concept "Best From Waste".

Several Research works have been carried out to examine the possibility of reusing waste glass in concrete & construction industry as alternative solution to reduce the generated bulk of mixed color waste recycled glass.

2. OBJECTIVE

- The body of the paper consists of numbered sections that to study the mechanical properties of concrete by addition of glass powdering concrete.
- To determine the optimum percentage of glass fiber in concrete for maximum strength.
- To compare normal concrete with glass mix concrete.

METHODOLOGY.

The methodology describes the detailed procedure used to carry out analysis and experimental work to be done for successful achievement of objects of this project work. Since, from literature review to the concluding remark is included. In this we explained the basic information required for mix design and concept of experimental work.

Research -

The information was collected from national and international journals, technical magazines and reference books and also through the internet. From all this collected information we get clear idea about what to do and how to do?? About partial replacement of glass powder in cement.

- Advantages of mix design-

Mix design aims to achieve good quality concrete at site economically.



Utilization of Waste Material in Road Sub Grade for Stabilization of Soil

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Abstract: Soil stabilization is a quite common process for nearly all the building projects. Broadly, all kinds of soil stabilization may be classified into two groups, i.e. mechanical stabilization and chemical stabilization.

In mechanical stabilization, the grading of a soil is modified by mixing it with other sorts of soils of various grades. By doing so, a compacted soil mass may be achieved.

On the opposite hand, chemical stabilization is related to the modification of soil properties by the addition of chemically active materials. In soil stabilization, it's important to grasp the material properties involved within the mixture and also the outcome after mixing.

Moreover, it's important to seek out out how the material goes to perform after stabilization. At the identical time the consequences of the method on the nearby structures and surrounding conditions have to be evaluated. Accordingly, decisions may be taken on the choice of materials and therefore the corresponding doses

I. INTRODUCTION

A developing country like India that features a giant geographic area and population, demands large infrastructure i.e. network of roads and buildings. land is being utilized for numerous structures from standard house to sky scrapers, bridges to airports and from rural roads to expressways.

Most the structures are going to be placed on numerous soil strata. Soil that consisting inorganic particles and organic matter like rock particles, sand, silt, and clay. it's shaped by the gradual disintegration or decomposition of rocks because of natural processes that features disintegration of rock because of stresses arising from enlargement or contraction with temperature changes.

Weathering and decomposition from chemical changes that occur once water, gas and CO₂ step by step mix with minerals among the rock formation, so it's breaking right down to sand, silt and clay.

Transportation of soil materials by wind, water and ice forms totally different soil formations like those found in watercourse deltas, sand dunes and glacial deposits.

Temperature, rain and evaporation play necessary roles within the formation of soils as within the totally different environmental condition regions. underneath totally different evaporation regimes, totally different soils are shaped from an equivalent original rockformation.

II. OBJECTIVES

- 1) To study the reasons of failure of road
- 2) Testing existing soil and adding different material to improve its strength.
- 3) To study different types of material available.
- 4) To improve quality of subgrade.
- 5) To alter the properties of soil to suit the traffic requirements.
- 6) It is done to minimize the swelling due to wetting and shrinkage
- 7) To increase bearing capacity of soil.

A. Test to be Conducted

- a) Moisture content.
- b) Particle Size Distribution.
- c) Liquid limit test.
- d) Plastic limit





Development of Ai Based App for Construction Planning Management System

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Abstract: The construction industry is continuously seeking innovative solutions to improve project planning, management, and execution processes. In recent years, the integration of Artificial Intelligence (AI) and Internet of Things (IoT) technologies has gained significant attention as a promising approach to address

The study explores the integration of AI and IOT in project scheduling, resource allocation, risk management, and quality control. Furthermore, the paper discusses the potential impact of these technologies on improving construction efficiency, reducing costs, and enhancing overall project outcomes. The system enables improved project planning and scheduling by considering various factors such as available resources, labor, equipment, and weather conditions. It optimizes resource allocation to minimize waste and delays, resulting in enhanced productivity.

Index Terms – Construction, Planning, Ai based App, Management System.

I. INTRODUCTION

Artificial Intelligence is the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. Growth of AI in construction project management continues from scheduling project timelines to allocating resources, assessing costs analysis to creating risk mitigation, the application of high-performing project management software can make a fiscal and practical impact. The term IOT (Internet of things) refers to the collective network of connected devices and the technology that facilitates communication between devices and the cloud, as well as between the devices themselves. Artificial Intelligence serve to simulate human intelligence through the power of computers. There are two ways the computer can gain artificial intelligence.

1. Machine learning (ML)

2. Deep learning

An extensive and cohesive project organization solution will be offered leveraging AI and IoT techniques to completely improve this predicament. The construction industry presents unique characteristics that differentiate it from other industries including a project takes place over a long period of time, it involves on-site production, a large number of people are implicated, and company staff is highly variable. Additionally, during the project lifecycle, an vast amount of documents with relevant data are produced and exchanged. These data have many diverse formats and are stored in different databases (DBs) and applications (even on paper). This complexity makes the project management difficult (1).

The site team needs correct resource information about the construction tasks in order to effectively conduct look ahead and weekly planning activities. In this regard, Caldas et al. mention that in a fragmented and dynamic environment, the integration and exchange of information between various organizational information systems and sources is crucial for efficient production management (2).

Artificial intelligence (AI) is playing a vital role in the Fourth Industrial Revolution (Industry 4.0), i.e., the digitalization era, where in intelligent systems and technologies are used to create an active connection between the physical and virtual (digital) worlds.

AI denotes the science and engineering of creating intelligent machines that exhibit reasoning, learning, knowledge, communication, perception, planning, and the ability to move and operate objects (3).

AI approaches have been developed since the upcoming of information technologies beginning in 1950s with rising computing power, the discussion of AI usefulness has been refuelled by new powerful algorithms and in particular availability of internet as a vast resource of unstructured data.

Experimental Study on Bubble Deck Beam Using HDPE Balls

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Abstract: In building constructions, the beam is a very important structural member to carry load of the slab. Bubble beam is a method of virtually eliminating all concrete from the middle of a Beam, which is not performing any structural function, thereby dramatically reducing structural dead load. Bubble beam is a beam whose core is replaced with Spherical balls that can be of various sizes and shapes. Usually the Bubble Deck system combines the benefits of factory manufactured elements in controlled conditions along with on-site completion. Some of its major benefits are lower total cost, reduced material use, enhanced structural efficiency, decreased construction time, and is a green technology. In this project the ineffective concrete in the Centre of the beam is replaced with High density polyethylene hollow spheres, using M30 grade of concrete no of beams with and without spherical bubbles were casted to compare weight and flexural strength.

Keywords: Conventional Beam, Bubbled Beam, Concrete, etc.

INTRODUCTION

I. The elements of beam design is a topic of great interest for structural engineers and contractors. Beam design is integral in the design and construction of a structure. Most structural beams are comprised of wood, steel or concrete. Each of these construction materials reacts differently under the stress of a load. Each also has its own unique advantages. Concrete beams are most often seen in commercial construction, such as in the erection of multi-level parking decks, hospitals, and large hotels. Concrete beams are also commonly used as bridge and highway supports. Some concrete beams are used in conjunction with steel beams to provide added strength.

Concrete is a strong building material, but it is susceptible to water damage and cracking. Iron bars are often included in the beams to add strength and stability over areas prone to greater stress. Concrete beams are also desirable for their ability to absorb sound and vibration. Nowadays research efforts are continuously looking for new, better and efficient construction material and method. The concrete should be used as efficiently as much as possible.

Concrete materials are still a dominant material for construction due to its advantages such as workability, low cost and fire resistance as well as its low maintenance cost. It is formed from a hardened mixture of cement, fine aggregate, coarse aggregate, water and some admixture. Massive exploration of the natural resources for producing concrete affect to the environment condition and global warming. We have responsibility to reduce the effect of the application of concrete materials to environmental impact. The concrete should be used as efficient as possible.

According to the natural behaviour of the concrete, it is strong in compression and weak in tension. Our assumption to design the R.C beams is the contribution of tensile stress of the concrete is neglected. The flexural capacity (MR) of the beam is influenced only by compression stresses of the concrete and the tensile stress of the steel reinforcement. Efficient use of the concrete materials can be done by replacing the concrete in and near the neutral axis.

BUBBLE-DECK TECHNOLOGY

II. Bubble-Deck is a biaxial technology that increases span length and makes the depth of beams thinner by reducing the self-weight while maintaining the performance of reinforced concrete beam.

Bubble deck system is a new construction technology using recycled spherical balls in slabs to reduce self-weight of the structure as part of the concrete is replaced by the bubbles. The use of this spherical balls/bubbles to fill the voids in the middle of a beam eliminates 35% of beam self-weight compared to solid slab having same depth without affecting its deflection behavior & bending strength of beams.





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FLOW ANALYSIS OF RIVER USING HEC-RAS SOFTWARE

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Abstract : Floods frequently threaten villages near the Khazir River's floodplains, causing crop losses and threatening residential areas. We used flood-related hydrological software, including WMS and HEC-HMS, to study this issue and determine how to reduce the recurrence of flooding.

The software can be used to calculate a hydrograph of torrential flows in a river drainage basin and estimate the volume of torrential water and its flow rates on the Earth's surface. The depth of rain has been evaluated and calculated in the SCS Unit Hydrograph for different return periods of 2, 5, 10, 20, 50, and 100 years. According to our study's findings, the volume of the river's drainage basin floods ranged between 29,680 and 2,229,200 m³, and the maximum flow value ranged between 10.4 and 66.4 m³/sec during various reference periods. To analyse and model the flood risks of the Khazir River, the HEC-RAS model was combined with the HEC-GeoRAS extension in ArcGIS. The floods were the focus of two study periods, 2013 and 2018, and were based on the digital elevation model and river discharge during the floods. According to the classification map of the flood depths, the areas of flood risk varied from low to very low (80.31%), medium (16.03%), and high to very high (3.8%).

IndexTerms – HEC-RAS ARC GIS QGIS.

I. INTRODUCTION

II. In India, rainfall is the principal form of precipitation. The rainfall is drained off from the catchment through a surface channel called as runoff. When this runoff overflows, submerges the surrounding land leading to occurrence of flood. It is important to study the scenarios of depth and the extent that water flows out of its boundary conditions. Steady flow is the condition where the depth and velocity at particular channel location do not change with respect to time. Flood is dangerous to life and this may damage big amount of properties. Hence flood plain mapping and flood analysis has to be done in order take precautionary measures in advance. In this present study we have used HEC-RAS software for flood analysis. HEC-RAS is a hydraulic model developed by hydrologic Engineering Centre (HEC) of the US Army Corps of Engineers. It is open-source software and analyses the flood from the basin with different discharge condition for the urban area, and determines water surface elevation.

III. During the months of July and August 2019, Sangli and Kolhapur districts in Krishna sub basins experienced extreme floods for long durations. Heavy losses to life, property and crops etc. had been reported. Different opinions at various levels were put forth concerning these flood situations faced by Sangli and Kolhapur districts. Floods of 2005 and 2006 were also noteworthy. However, the 2019-2021 flood situations were comparatively much more severe which lasted more than a week and losses experienced were also on a higher scale. It is therefore necessary to find out different ways to counter flooding, in-depth analysis and other reasons behind the flood situation to prevent the repetition of such unfortunate events in future.

IV. Flood devastation is increasing in this region due to rapid increase in the population and human activities. In 2005, 107 villages were heavily affected by flood

V. and 27 villages were completely marooned by flood water. During that period 40,000 people were shifted to relief camps and 26 human casualties were reported. Agricultural area of 520 sq.km of Kolhapur district

Comparative Study on Strength Enhancement of Concrete Using Ruber Crumb, Magnetized and Normal Water

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Abstract — Water plays an important role in the concrete preparation. It in workability and strength. A new technology known as magnetized water is used to increase the workability and strength of concrete. At the same time, after pure water is magnetized, we should inject immediately the magnetized water into the sample baths of the instrument to measure the properties because the time, in which the magnetization effect can be retained, is finite. The experiments should be repeated about 2-3 times for the credibility. Hence normal water concrete with crumb rubber shows nearly same strength compared to normal water concrete, so waste can put to work.

Keywords: Crumb Rubber, Concrete Strength, Magnetic Water, Sustainability

I. INTRODUCTION

In this research study, the effect of magnetized water on workability and compressive strength of concrete was studied, in order to obtain operative concrete with high resistance and at a lower cost. Data were collected from previous studies and researches. Slump and compressive strength tests were carried out on all four mixes and it was found out that concrete produced by the magnetic technology is easy to operate without affecting the compressive resistance of concrete. It was also found that magnetized water increases the compressive resistance of concrete while cement is reduced upto 25%. As considering the crumb rubber huge amount of waste can be brought into Converting factor as comparing on going global wastages solution. Urbanization and the day to day exponential increase in the number of automobiles has increased the usage of rubber. AS an attempt to reuse this waste, many experimental studies are carried out using it as a filler material in concrete industry. This paper presents a review of the work carried out by the past and recent researchers who studied the fresh and hardened properties of concrete with crumb rubber as an auxiliary material. Durability of concrete most importantly depends upon its strength and resistance to cracking. Strength involves compressive, tensile and flexural strength. Tensile and flexural capacities of Fiber Reinforced Concrete (FRC) are greatly enhanced compared to unreinforced concrete. Moreover, addition of fibers significantly improves concrete post-cracking behaviour and hence, FRC is a fast growing field in the civil engineering industry. FRC also displays increased resistance to cracking, greater control of crack size and its propagation. Whereas, the conventional reinforcement deals with large permanent plastic strain; weak recentring capability; low resistance against corrosion; and low resistance against fatigue.

To overcome this deficiency, intensive research was carried out in the field of structural engineering over the past decade to develop alternative reinforcement. AS a result,

advanced materials in the form of super elastic (SE) shape memory alloy (SMA) has been developed, which can undergo large in elastic deformations and recover its original shape by stress to removal, thus diminishing the problem of permanent deformation material shaving one or more properties which be changed by a controlled external stimulus such as moisture, stress, pH, temperature, magnetic or electric fields are called as smart materials. Shape memory alloy [SMAs] is smart material which is a group of alloys that can return to their initial shape and size when they subjected to a restoration process between two phases under the effect of a change in temperature. This phenomenon is named "Shape Memory". They also have high strength, high energy absorption, high damping, good fatigue resistance, good corrosion resistance and excellent recentring ability. They can be formed into various shapes like bars, plates, wires and ring thus serving various functions.

II. PROBLEM OVER THE WORLD

Water is basic need of human and other living things. It is also required for farming cleaning & industrial purpose. Water scarcity already affects every continent. Around 1.2 Billion people, oral most one-fifth of the world's population, live in areas of physical scarcity, and 500 million people are approaching this situation. Another 1.6 billion people, oral most on equator of the world's population, face economic water shortage. Water scarcity is among the main problems to be faced by many societies and the world in the XXI century. Water use has been growing at more than twice the rate of population increase in the last century, and although there is no global water scarcity as such, an increasing number of regions are chronically short. Large water is required for construction activities.

It is required to use available water effectively. Generally, there are following main purposes which require large amount of water:

- 1) Domestic Purpose
- 2) Farming Purpose
- 3) Industrial Purpose
- 4) Construction Purpose

III. SCOPE OF MAGNETIZED WATER IN VARIOUS FIELDS:

A. Health benefits of magnetized water

Magnetized water reduces excess acidity and bile in the digestive system. It helps to regulate the movement of the bowels expelling all accumulations of poisonous matter. The use of magnetic water in treatment of urinary and kidney disorders like kidney stones have shown encouraging results. Magnetized water is also very beneficial for nervous disorders and treatment of blood pressure, especially low blood pressure. It gives a soothing and slightly sedative effect

STRESS ANALYSIS OF HIGH SPEED TURBOMACHINE

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ABSTRACT

The objective of this thesis is to investigate the stresses present in high-speed turbo machinery. The specific turbo machine under examination is a small turboexpander, consisting of a rotor, compressor, and turbine wheel. Rotors are commonly used in various industries, but when subjected to extremely high angular velocities, they experience significant centrifugal forces that can induce stress and deformation. The high rotational speed of the rotor not only leads to elevated stress levels but also introduces deformations. Critical components like the thrust collar on the shaft and the compressor operate near their failure stress limits due to the intense operating conditions. Ductile materials are particularly susceptible to fatigue failure compared to brittle materials because the stress concentrations cannot be alleviated by local deformations, as seen in static loading scenarios. To ensure the reliability and performance of these components, it is crucial to analyze the stresses and deformations they experience before implementing them in practical applications. This project focuses on the analysis of the rotor, turbine wheel blades, and compressor wheel in a high-speed turbomachinery system. The stress and deformation of these components are evaluated using ANSYS software, and solid models are generated using SolidWorks. The analysis reveals critical areas in different components of the turbo machine, providing valuable insights for design improvements. This thesis also outlines the detailed steps involved in performing ANSYS analysis of turbo machinery components. The author anticipates that the analysis and conclusions presented will assist the engineering community in analyzing, designing, and fabricating turbomachinery with enhanced reliability and efficiency.

Keywords: Turboexpander, Ductile Materials, Fatigue Failure, ANSYS Software, Solidworks, Critical Areas.

I. INTRODUCTION

High-speed turbomachines play a crucial role in various industries and applications due to their ability to efficiently convert energy between fluid and mechanical forms. Here are some key aspects of their use, working principles, and applications:

Use of High-Speed Turbomachines:

1. **Energy Conversion:** High-speed turbomachines are used to convert energy between fluid and mechanical forms. They can either extract energy from a fluid stream (as in turbines) or add energy to a fluid stream (as in compressors).
2. **Power Generation:** Turbomachines, such as high-speed gas turbines, are commonly employed in power generation facilities to drive generators and produce electricity.
3. **Mechanical Drive Systems:** High-speed turbomachines are utilized in mechanical drive systems, where they provide rotational motion for various industrial processes such as pumps, fans, and compressors.

Working Principles of High-Speed Turbomachines:

1. **Turbines:** In turbines, high-speed fluid flows through stationary blades (nozzles) and then passes through a series of rotating blades (rotor). The fluid's kinetic energy is converted into mechanical energy as it imparts a torque on the rotor.
2. **Compressors:** Compressors operate in the opposite manner to turbines. They use rotating blades to accelerate the fluid, increasing its kinetic energy, and then pass it through stationary blades to convert the kinetic energy into pressure energy. This process raises the pressure of the fluid.



STATIC AND DYNAMIC ANALYSIS OF HCR SPUR GEAR DRIVE USING FINITE ELEMENT ANALYSIS

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ABSTRACT

This thesis focuses on analyzing the characteristics of a gear system, specifically contact stresses, bending stresses, and transmission errors during gear meshing. Gearing plays a crucial role in mechanical power transmission systems. The contact stresses were evaluated using 2-D Finite Element Method (FEM) models, while the bending stresses in the tooth root were examined using a 3-D FEM model.

Traditionally, Hertz's equations have been used to calculate gear contact stresses, but they were initially derived for contact between two cylinders. In order to study contact problems using FEM, a stiffness relationship between the contact areas is established by introducing a spring element. A contact element is inserted between the two contact areas to facilitate this process. The results of the 2-D FEM analyses conducted in ANSYS are presented and compared with theoretical values. The agreement between the two sets of results confirms the accuracy of the FEM model.

Additionally, this thesis investigates the variations in the overall gear body stiffness caused by gear body rotation due to bending deflection, shearing displacement, and contact deformation. Various positions within the gear meshing cycle were explored. Despite previous studies, the investigation of contact and bending stress characteristics of spur gears remains highly relevant to engineers and researchers. With advancements in engineering technology, the demand for gears with higher load capacities, speeds, and reliability has increased. Accurately predicting the stresses experienced by loaded gears is essential for designers in meeting these requirements.

Keywords: FEM, ANSYS, Stiffness, Contact Stresses, Bending Stresses.

I. INTRODUCTION

The static and dynamic analysis of high-contact-ratio (HCR) spur gear drives using Finite Element Analysis (FEA) is a topic of significant importance in the field of mechanical engineering. Spur gears are widely used in various industries for power transmission due to their simplicity, efficiency, and reliability. Understanding the behavior of spur gears under static and dynamic loading conditions is crucial for designing robust and efficient gear systems.

Static analysis involves studying the response of gears under steady-state or static loading conditions. It focuses on determining the contact stresses, bending stresses, and deformations that occur in the gear teeth and other critical regions. Static analysis helps engineers evaluate the structural integrity of gears and ensure that they can withstand the applied loads without failure or excessive deformations.

On the other hand, dynamic analysis deals with the behavior of gears under varying or dynamic loading conditions. It considers the effects of rotational speed, gear meshing forces, and inertial forces on the gear system. Dynamic analysis is essential for assessing the dynamic performance of gears, including vibration, noise, and the potential for resonances or instabilities. By analyzing the dynamic behavior of spur gears, engineers can optimize their design to minimize vibrations, noise, and premature failures.

Finite Element Analysis (FEA) is a powerful numerical method used to simulate and analyze the behavior of complex structures, such as spur gears. FEA divides the gear geometry into finite elements, allowing for detailed analysis of stress distribution, deformation, and motion. By discretizing the gear geometry, FEA provides a comprehensive understanding of the gear's response to various loading conditions.

FEM ANALYSIS FOR WEDM PROCESS

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ABSTRACT

This research introduces a novel approach utilizing a three-dimensional finite element model created in ANSYS software to accurately forecast the temperature distribution and stress patterns in the wire during Wire Electrical Discharge Machining (WEDM). The study focuses on achieving precision in machining conductive materials and highlights the importance of predicting temperature and stress for optimal results. By employing a transient thermal analysis with temperature-dependent material properties and assuming a Gaussian distribution heat source, the investigation unveils the temperature distribution and stress development during and after the spark. Notably, the study delves into the impact of the pulse-on-time parameter, revealing a significant increase in peak temperature as the parameter is adjusted. The findings shed light on the intricate interplay between machining parameters, temperature, and stress in WEDM processes.

Keywords: ANSYS, WEDM, Residual stress, Thermal stress, Temperature.

1. INTRODUCTION

Wire Electrical Discharge Machining (WEDM) is a widely used precision machining technique employed for the fabrication of intricate shapes in conductive materials. It is particularly favored in industries where high accuracy and surface finish are critical requirements. WEDM operates on the principle of generating controlled electrical discharges between a taut wire electrode and the workpiece submerged in a dielectric fluid. Thermal and mechanical phenomena occurring during this process significantly influence the final outcome in terms of dimensional accuracy, surface quality, and material integrity.

In order to optimize the WEDM process and enhance its efficiency, it is crucial to understand the complex thermal and mechanical aspects involved. Traditional experimental methods are time-consuming, expensive, and limited in providing detailed insights into the underlying physics. Therefore, numerical simulation techniques, such as Finite Element Analysis (FEA), have gained significant attention for investigating the temperature distribution and stress development during WEDM.

FEA offers a powerful tool to analyze the WEDM process by simulating the physical phenomena using a virtual model. By discretizing the domain into small elements and solving the governing equations, FEA allows for accurate predictions of temperature, stress, and other important parameters at different stages of the process. This information can be utilized to optimize machining parameters, reduce manufacturing costs, minimize material waste, and enhance the overall productivity of the WEDM process.

In recent years, advancements in computational capabilities and software tools, such as ANSYS, have enabled researchers to develop sophisticated three-dimensional FEA models to simulate WEDM processes. These models consider various factors such as heat transfer, electrical discharge, material behavior, and fluid dynamics, providing a comprehensive understanding of the process dynamics.

This study aims to utilize a three-dimensional FEA model implemented in ANSYS software to analyze the temperature distribution and stress patterns during WEDM. By incorporating temperature-dependent material properties and assuming a Gaussian distribution heat source, the transient thermal analysis accurately predicts the temperature evolution during and after the electrical discharge. Furthermore, the model enables the investigation of stress distribution, including thermal stress immediately after the spark and residual stress during subsequent cooling.

The primary objective of this research is to gain insights into the influence of important machining parameters with a specific focus on the pulse-on-time parameter. By analyzing the effects of varying pulse-on-time on the



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MODERNISTIC WASTE WATER SOAKAWAY

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Abstract: Urbanization and industrialization is trend of this and past century and it taking over in every field possible. As fast technology is growing the side effects are now coming in views. The more urbanization and population are growing the more pollution and waste is being generated. Waste consists of plastic, waste water, degradable and biodegradable material. Some of the waste can be recycled, some can be reused and some just disposed. Now that earth consist 70 % of water, the waste water is comes walking right behind it. But main relief is waste water recyclable and reusable. Government install sewage treatment plants wherever possible but it is not possible to install in some of rural areas as there is other alternative to this problem is soak pit. The aim of this study to analyze and to study soaks pit method in detail in order to highlight its importance more.

Index Terms - Soakaway, Waste Water, Groundwater, Recycling, Pollution Control

I. INTRODUCTION

In rural areas domestic wastewater is a source of wastewater i.e. water utilized for bathing, cooking, washing utensils and clothes. Such water is not so dangerous and can be a source of artificial groundwater recharge with some basic treatment. Also the wastewater in rural areas is disposed of on open land and gutters which creates unhygienic condition which causes different diseases to people living around. Utilizing such wastewater can avoid such condition and can help to increase the groundwater

The waste water from houses like water used for bathing, washing clothes and utensils is disposed in gutters and on open land in rural areas. Such water creates unhygienic condition in nearest areas. Also villages have lack of drainage system. Such disposal creates nuisance of mosquito to the people and also various diseases rises. The study is about disposal of domestic wastewater without creating unhygienic condition at domestic level. The study uses the method of magic soak pit for disposal of wastewater. The study identifies that the magic soak pit method is safe to dispose the wastewater. The method used is not only disposes the wastewater but also increases the ground water level.



Original Article

Discrete Wavelet Transform with Thresholding: An Effective Speech De-Noising Algorithm

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Abstract - The research of speech augmentation has become increasingly popular in the domain of speech processing. It mainly concentrates on removing the voice stream's additive background noise, significantly degrading speech interpretability. The objective of speech enhancement is to eliminate additive noise from the speech signal and restore the original signal. There are presented methods for improving speech based on speech and noise signals' perceptual, auditory, or statistical limitations. Predicting the features of the voice signal and any background noise is quite difficult in a decent environment. Speech processing is challenging due to the absence of a specific framework for the speech signal and a cognitively important distortion scale. Speech transmissions are also, by nature, non-stationary. Consequently, adaptive estimate methods that don't require an explicit predictive method for the underlying signal statistics typically overlook changes. Therefore, by utilizing voice enhancement techniques, signal noise can be somewhat decreased. Additionally, there is a trade-off between the amount of noise suppressed and the irregularities in the voice signal produced. This study aims to provide an efficient method for examining voice augmentation techniques. Another problem is the simplicity with which noise-suppression algorithms can be applied in mobile phones and digital hearing aids. New strategies are needed to improve the effectiveness of speech enhancement technologies in light of the aforementioned limitations. Due to their excellent efficiency, transform domain filters are frequently used in this study's speech improvement process.

Keywords - Speech processing, DCT, Discrete Wavelet Transform, Thresholding, Signal to noise ratio, MoS, LLR ISD, etc.

1. Introduction

Speech is the vocalised form of human communication. Its foundation is the syntactic integration of terms from extensive dictionaries. Enhancement is the increase or improvement of quality, value, or extent. The aim of improving speech is to significantly enhance the quality and comprehensibility of a compromised spoken signal using audio signal processing methods. A variety of noises impedes speech. Speech intelligibility and quality suffer as a result. The most important aspect of enhancing speech is recovering speech that has been inhibited by noise. Voice augmentation is used in a number of applications, including teleconferencing, VoIP, mobile phones, voice recognition, and hearing impairment. A speech augmentation system needs to provide excellent service for all voice signals. The user chooses sample functions randomly as part of the input method for the voice augmentation system. By definition, noise is stochastic. In light of this, the statistical estimation problem that depends on a single random process and noise is the speech enhancement problem. The mathematical theories of signal and noise, as well as a distortions metric that assesses the similarity between the clean signal and its

anticipated version, are necessary for estimation theory. These two essential elements of estimate theory are not readily available for voice signals. A lack of a framework for reliable speech signals and a distortion metric with cognitive significance causes the problems. Additionally, the speech signals are not continuous at all times. The result is Adaptive estimate methods that don't require a particular forecast method for the signal frequently miss changes in the fundamental statistics of the signal.

2. Literature Survey

This gives a brief description of the methods currently in use to denoise speech signals. The coherence function is estimated without the input signals relying on prior noise statistics in this paper's [3] new method for multi-channel speech enhancement. A gain function is used by the discrete wavelet transform (DWT). When used in a home with interfering speakers, this strategy produced good results when numerous noise kinds corrupts speech.

The use of wavelet de-noising on the speech input of the MFCC feature extraction method was presented in this



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ENHANCEMENT OF POWER SYSTEM AND CONTROL BY IMPLEMENTATION OF FACTS DEVICES

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ABSTRACT

Modern power systems complicate power system research and pose new issues for stability of power system, notably in the areas of unstable transients and stability of small-signals. Transient stability regulation is basic in guaranteeing the relentless operation of control frameworks within the nearness of noteworthy unsettling influences and glitches. This study looks at how a 2-area power system that uses a TCSC, STATCOM, SVC and UPFC can improve its transient stability. The TCSC, SVC and STATCOM has been used to contrast the capability of the UPFC with other FACTS devices. The results of the simulations illustrate the productivity and constancy of the FACTS devices in improving the system's transient stability.

Keywords- Transient stability, UPFC, UPSC, TCSC, 2-area power system, SVC, STATCOM, FACTS.

1. INTRODUCTION

Growing demand and limits on adding new lines are straining modern power system transmission networks. A disturbed stressed system may lose stability. Flexible AC Transmission System (FACTS) gadgets are competent of transmission to extend its capacity without risking its stability. Flexible AC Transmission System (FACTS) controllers like SVC, TCSC utilize the foremost up-to-date control electronic exchanging gadgets in electric control transmission frameworks to control voltage and control stream inside endorsed limits and



Lifting Trolley for Easy Mounting

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Abstract : Hydraulic Trolley is the device used or carrying load or to transport the material from one point to another. For different types of application various types of trollies are available in the market. Depending upon the specific use the one will select the trolley, but it is limited to do a specific work. To overcome this problem, a new trolley was designed which could be used for multi-purpose. There are many types of trolley available in the market for various fields like airport, shopping malls, industries, hospitals etc. to carry the heavy or light loads. This paper contains the development of trolley, which includes design on the basis of creativity skills and fabrication, which can be used for more than one type of task. The trolley designed is the integration of airport trolley and shopping mall trolley. One more advantageous feature added to the design was a motorized wheel which reduces the human effort for carrying of load and also it can be operated manually if required.

Index Terms – Hydraulic, Trolley, Lift.

I. INTRODUCTION

The structure of this thesis is planned as follows: in the first part, the theory is presented. It consists of several topics concerning overall of lifting tables of scissors type, things that are needed for the design, principles of working, technical characterization and others.

The first part is needed to give a general concept of the subject and after that comes the practical part which presents and explains how to perform the knowledge. It contains the 3D model of the lift, calculations of the load, several diagrams, charts, and stress calculations, which confirm the viability and validity of the theory part.

Such a thesis structure was chosen as the most appropriate and suitable for the chosen topic. It allows increasing knowledge by appealing to the literature and adding an individuality of the author by making him solve an actual practical problem using own approach.

The scissors elevator is an elevator with a system of levers and hydraulic cylinders on which the metal platform is capable of moving in the vertical plane. This is achieved by using of linked, folding supports in a crisscross pattern, called scissor mechanism.

The hydraulic lift was chosen as a subject of the thesis because it is a perfect example of mechanical engineering field. This mechanism combines a result of several main fields of engineering and at the same time, it is simple and accessible for understanding. The construction and load distribution represent statics and strength of material subjects, the hydraulic cylinder and the control unit involve knowledge of hydraulic systems and automation. Material science is important for selection of a suitable material as well as knowledge of 3D modeling. Also, scissors lift is an integral part of most of the workshops and building objects. The key advantage of lifts is that they even offer the best way to organise a technological and industrial process. Besides, almost all lifts give the possibility to change the place of their installation without much effort, which is important in the frequently changing conditions in the production process these days..

II. STATEMENT OF THE PROBLEM

A problem remains a problem until a solution is offered. With the limitations encountered in the use of Cranes, ropes, ladders, scaffold and mechanical scissors lifts in getting to elevated height such as the amount of load to be carried, conformability, time consumption, much energy expended etc. the idea of a hydraulically powered scissors lift which will overcome the above stated limitations is used.

III. LITERATURE REVIEW

Hydraulic lifting trolley is a device to raise something, such as worker, materials or objects to a certain height as desired. However, if the scissor lift is designed, manufactured and maintained in accordance properly, it will improve job performance, productivity and safety factor. Unfortunately, there are still many accidents that occur due to the lack of safety factors in the design. Some of these factors are scissor-speed, heavy load which not appropriate and the material strength. It is necessary to design highly appropriate to determine the sizes and strength on this device. (Ren G.Dong, 2012)

Every part of the machine cannot move to a position corresponding to the desired to move a component. Some of them are aerial lifts, boom lifts, scissorlift, towable elevator used to move a material or device to different directions as desired. A scissor lift is a portable, easily extended and compressed, used for safe operating machine. (M.Kiran Kumar, 2016)

Mans quest for improvement has never been satisfied. The drive towards better and greater scientific and technological outcome has made the world dynamic. Before now, several scientist and engineers have done a lot of work as regards the scissors lift in general. A review of some of that work gives the design and construction of a hydraulic scissors lift a platform.



COMPARATIVE STUDY OF STEEL CONNECTION USING US AND IS CODE ON TEKLA STRUCTURE

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Abstract

This paper presents a comprehensive comparative study of steel connections implemented in Tekla Structures software, employing both the US and IS (Indian Standards) codes. The investigation focuses on analyzing the differences in design criteria, detailing requirements, and fabrication practices between the two codes. Specifically, the study explores variations in bolt sizing, beam and column dimensions, as well as detailing specifications for bolted connections. Through detailed examination and comparison, significant disparities are identified, highlighting the importance of adhering to specific standards to ensure structural integrity and compatibility in construction projects. Additionally, the study addresses the implications of these differences on material estimation, cost evaluation, and overall project outcomes. By providing insights into the utilization of US and IS codes within Tekla Structures, this research contributes to enhancing the understanding and implementation of international standards in structural engineering practices.

Keyword- Tekla Structure, Steel Structure, Us and Is Codes

I. INTRODUCTION:

In steel structures, globalization brings Engineers a new challenge since nowadays an engineer can design structures in different places around the world. The design procedure can be similar; however, each country or area is governed by its design specifications. The steel connections are one of the main components of steel structures and their role is to connect the steel members in a structure. The steel elements can be connected by bolting, welding, or by both elements. This comparison studies the specifications of connection design in two design codes. This study compares the connection design specifications from the United States of America & India.

When comparing the Indian Standard (IS) and the United States (US) steel codes, several differences and similarities emerge based on structural design methodologies, industry practices, and regulatory frameworks. Here are some key points regarding the results of comparing these two steel codes:

1. Design Philosophy:

- The IS steel code, represented by standards such as IS 800:2007, follows design philosophies tailored to Indian engineering practices, environmental conditions, and construction norms.
- In contrast, the US steel code, governed primarily by the American Institute of Steel Construction (AISC), reflects design philosophies and methodologies prevalent in the United States, incorporating factors like seismic

considerations, wind loads, and snow loads.

2. Material Specifications:

- Both the IS and US steel codes provide specifications for various grades of structural steel materials, detailing their mechanical properties, chemical compositions, and allowable stresses.
- While some similarities may exist in material specifications between the IS and US codes, differences may arise due to regional steel manufacturing practices and material availability.

3. Connection Design and Detailing:

- Both the IS and US steel codes provide guidelines for the design and detailing of connections, including bolted connections, welded connections, and other structural fastening methods.
- However, specific detailing requirements, bolt sizes, weld types, and connection capacities may vary between the two codes based on engineering practices and industry standards.

4. Regulatory Framework:

- The IS steel code is regulated by the Bureau of Indian Standards (BIS), which establishes and maintains standards for various industries in India, including steel construction.
- In the United States, the AISC develops and updates steel design standards in coordination with other regulatory bodies

and professional organizations, ensuring compliance with national building codes and regulations.

Soil Stabilization by Using Lime and Fly Ash

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Abstract: Now a days, inefficient properties of soils are a critical issue in engineering projects. In some cases, improve the characteristic of unsuitable soil is a fundamental step for making construction. Pavement structures on poor soil sub grades show early distress causing the premature failure of the pavement. Clayey soil usually has the potential to demonstrate undesirable engineering behaviour, such as low bearing capacity, high shrinkage and swell characteristics and high moisture susceptibility. Stabilization of this soil is a usual practice for improving the strength. Soil stabilization performed the use of technique to adding a binder to the soil in order to improve the engineering performance of soil. This study reports the improvement in the strength of a locally available cohesive soil by addition of both lime and fly ash. Researches were illustrated that adding the additives leads to progress in workability and mechanical behaviour of soil after stabilization lime and fly ash as local natural and industrial resources were applied for chemical stabilization. Lime alone has traditionally been used in clay-bearing, highly cohesive soil whereas fly ash has been used to bind non-cohesive soil, granular or poorly cohesive soil. Fly ash is mainly used to stabilize the sub base or base course.

Keywords: Atterberg's test, Black cotton soil, CBR, Fly ash, Lime, Maximum dry density, Optimum moisture content, Proctor compaction test, Stabilization, Water content.

1. Introduction

Stabilization of soils is an effective method for improving the properties of soil and pavement system performance. The objectives of any stabilization technique used are to increase the strength and stiffness of soil, improve the workability and constructability of the soil and reduce the Plasticity Index. For any given soil many stabilization methods, using different stabilizing agents like cement, lime, motor, bitumen, plastic, fly ash, etc. may be effective to improve the soil properties in place rather than removing and replacing the material. Availability or financial considerations may also be the determining factor on which a stabilizing agent is selected. Every manmade structure resting on the ground needs safe and stable soil. To attain these safety and stability requirements the engineering properties of the soil beneath the structure or on the structure must be identified. However, obtaining these engineering properties of soils requires relatively more time and money. On the other hand, investigating the index properties of a soil is much easier than other engineering properties in terms of time, money, and efforts research dwells on how black cotton soil (BCS) could be stabilized and made into a suitable subgrade material using saw

dust readily and cheaply available material. Fly ash mixed with BCS in varying proportions of 10%, 20%, and 30%. The BCS treated with optimum fly ash content was further stabilized with 5%, 10%, and 15% lime. Optimum reduction in liquid limit, differential free swell, plasticity index as well as an optimum increase in CBR was achieved treated tread with fly ash was stabilized with lime. Moreover, most of the engineering properties of soils depend upon their index properties. Therefore, by obtaining the index property of soil that involves a simpler and quicker method of testing, the engineering properties can be satisfactory. Soil compaction, California bearing ratio, and direct shear test are the most commonly used techniques in engineering projects such as highways, sub-grades, pavements, and foundations. The ins of these tests are to improve engineering proportions of soils such as increase in dry density, reduction in compressibility the leading to reduction in the settlement, and reduction in permeability, reload-bearing strength and its load-bearing capacity Atterberg's limit.

2. Scope of the Study

The scope of the present work includes the addition of, proportionally ash with different proportions to the locally available black cotton soils to enhance the engineering properties. The work presented in this paper aims to investigate the improvement of soil properties such as shear strength, maximum dry density (MDD), and CBR values by adding lime and the d fly ash which is collected from sugar cane factory. A series of laboratory tests are conducted on both virgin soils as well as on fly ash and lime reinforced soil to compare the improvement of soil properties. We have chosen project because of its following advantages.

1. It improves the strength of the soil, thus, increasing the soil bearing capacity.
2. It is more economical both in terms of cost and energy to increase the bearing capacity of the soil rather than going for a deep foundation or raft foundation.
3. It is also used to provide more stability to the soil on slopes or other such places.
4. Sometimes soil stabilization is also used to prevent soil erosion or formation of dust, which is very useful, especially in dry and arid weather.
5. Stabilization is also done for soil water-proofing; this prevents water from entering the soil and hence helps

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COMPARISON OF DIFFERENT BUILDING MATERIALS FOR ENHANCEMENT OF BUILDING COMFORT

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Abstract

As people spend more time indoors, the need for buildings that are not only energy-efficient but also comfortable and healthy has become more critical. The objective of this project is to compare the performance of different building materials in enhancing the building comfort by monitoring the temperature levels of three different rooms on an hourly basis. In order to achieve this objective, a sensor was designed and installed in each room to record the temperature readings. The data collected by the sensors was then analyzed and compared to determine the effect of different building materials on the indoor environment. The experiment was conducted over a period of 21 days and the data was collected for each hour of the day. The results of the study indicated that the choice of building material has a significant impact on the indoor environment, with some materials performing better than others in terms of maintaining comfortable temperature levels. The data collected was then presented in graphical form to facilitate easy comparison of the performance of different building materials. Overall, the findings of this study can be used to inform decisions about the choice of building materials for different construction projects in order to optimize the building comfort and ensure a healthy indoor environment.

Keyword- Temperature measurement device, Enhancement of building comfort, Three Different Building Materials clay burnt Brick masonry, Stone Masonry and AAC Block

I. INTRODUCTION:

Buildings are fundamental to our daily lives, providing us with shelter, security, and comfort. With an increasing number of people spending most of their time indoors, it has become more important than ever to create buildings that are not only energy-efficient but also comfortable and healthy. Building materials play a crucial role in achieving these goals, as they can affect the indoor environment's thermal, acoustic, and visual properties. By using appropriate materials, buildings can provide a comfortable indoor environment, reduce energy consumption, and improve occupants' health and well-being.

This project fills that research gap by conducting a detailed evaluation of various building materials. By installing sensors in three distinct rooms and collecting data over a 21-day period, we will capture the fluctuations in temperature throughout the day and night. The data collected will provide valuable insights into the performance of different materials and their influence on indoor comfort.

In summary, this project aims to contribute to the understanding of the impact of building materials on indoor comfort. By comparing the performance of different materials through continuous monitoring of temperature levels, we seek to provide valuable insights for enhancing building design and material selection, ultimately creating comfortable and healthy indoor environments.

1 Definition of Building Comfort:

Building Comfort, in terms of thermal insulation, involves creating a well-insulated and thermally efficient building envelope that effectively regulates indoor temperature, reduces energy consumption, and provides a comfortable and pleasant living or working environment for occupants.

Thermal insulation plays a crucial role in achieving building comfort by reducing heat gain or loss through the building envelope, which includes walls, roofs, floors, and windows. It involves the use of materials and construction techniques that limit the transfer of heat, helping to maintain a stable and comfortable indoor temperature.

2 Background

The background of the project lies in the importance of creating comfortable living and working environments. Buildings play a crucial role in providing shelter, and the comfort of occupants is essential for their well-being, productivity, and overall quality of life. The selection of suitable building materials can significantly affect indoor temperature levels, thereby influencing the comfort and satisfaction of occupants.

The project aims to assess and compare the performance of different building materials in terms of their impact on indoor temperature and humidity. This assessment is conducted by deploying sensors in three

“PROPOSED BY DISPOSAL OF MUNCIPAL SOLID WASTE BY BIO METHANATION IN GADHINGLAJ CITY”

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Abstract:

In India Bio-Methanation in conventional biogas plant have been proposed as one of the appropriate alternative sources of energy which can counter the escalating demand of fossil fuels. In India large quantity of waste generates produce per day and hence the noof biogas installation of biogas plant is increasing rapidly and the trend is expected to continueat least for the foreseeable future. Biogas plant like many other energy generating technologies is not free from environmental problem.

Biogas production requires anaerobic digestion. The biogas plant creates an organic processing facility to create biogas which will be more cost effective, eco friendly, cut down on landfill waste, generate a high quality renewable fuel and reduce Carbon Dioxide and Methane emission. The anaerobic digestion of kitchen waste produces biogas, which primarily consist of methane (CH_4) and Carbon Dioxide (CO_2). Biogas can be used

as energy source and also for numerous purposes. But any possible application requires knowledge and information about composition and quantity of constituent in the biogas produced.

INTRODUCTION

Energy is an essential need for human existence. There is shortage of energy due to fast depletion of fossil fuel and the increase in demand for energy .Due to scarcity of petroleum and coal it threatens supply of fuel throughout the world also problem of their combustion leads to research in different corners to get access the new source of energy, like renewable energy resources. Solar energy, wind energy, different thermal and hydro sources of energy, biogas are all renewable energy resources. But, biogas is distinct from other renewable energybecause its characteristics, controlling and collecting organic waste and the same time producing fertilizer and water in agricultural irrigation. Biogas does not have any geographical limitation nor those it require advanced

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ANALYSE THE EFFECT OF USE OF PLASTIC WASTE IN BITUMINOUS MIXTURE ON ITS STRENGTH AND OTHER PROPERTIES

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Abstract The waste materials are always a problem for the environment, some waste may be disposed easily and some cannot. Plastic is also a kind of material whose disposal is always a tedious job. The disposal of waste effected the environment drastically, for minimizing this effect several research in various field is going on to recycle plastic safely. One of its ways is to use the waste plastic in the road construction Plastic Road is a need of an hour as they not only consume waste plastic in an eco-friendly way, but also helpful in increasing the quality of the road. In the review paper we will thoroughly study some of the methods and technique through which plastic is used in the road construction and how these technologies suits in various conditions. Significant environmental and economic problems are created because all forms of plastic like carry bags, wrappers, chocolates, chips, hand bags, cold drinks bottles and lids of all bottles. Utilization of waste plastic bags in bituminous mixes has proved that these enhance the properties of mix in addition to solving disposal problem. The processed waste plastic, when added to hot aggregate will form a fine coat of plastic over the aggregate and such aggregate when mixed with the binder is founds to give higher strengths, higher resistance to water and better performance over a time period. Therefore, plastic roads, is a simple way to make eco-friendly constructions. The innovative technology not only strengthened the road construction but also increased the road life as well as will help to improve the environment. The main objective of this Paper is to discuss the significant of plastic in terms of innovative methodology for treatment and disposing and to provide solution to reduce, recycle, reuse by applying it for pavement and road construction.

Key Words: Plastic, Road Construction, Environment, Binder, Strength, Disposal

1. INTRODUCTION

Plastic waste when properly processed and incorporated into bituminous mixtures, can enhance the strength and durability of the resulting material. This is particularly important for road construction, where the pavement needs to withstand heavy traffic loads and environmental stresses. The inclusion of plastic waste can also improve the flexibility of bituminous mixtures, making them more resistant to cracking and deformation. This can lead to long-lasting roads that required less frequent maintenance. Utilizing plastic waste in bituminous mixtures contributes to environmental sustainability by reducing the amount of plastic sent to landfills or ending up in oceans and water ways. It promotes the concept of circular economy by repurposing waste

materials into valuable construction components. In some cases, incorporating plastic waste into bituminous mixture can be cost effective compare to traditional materials. This is especially true in regions where plastic waste management is a significant challenge and disposal cost are high. However, there are challenges to overcome, such as ensuring proper compatibility between plastic waste and bitumen, addressing potential negative impacts on properties like fatigue resistant, and meeting regulatory standards for road construction material.

2. Overview of literature survey

Many research work has been done in the area of use of plastic waste in bituminous road construction. The research papers states, Durability of the road laid out with shredded plastic waste is much more compared with roads with asphalt with the ordinary mix. roads laid with the plastic waste mix are found to be better than conventional once the binding property of plastic makes the road last longer besides giving added strength to withstand more load to the normal highway quality roads lasts 4-5yrs it is claimed that plastic bituminous roads can last up to 10yrs. Rain water will not seep through because of the plastic in the tar. So, this technology will result in lesser road repairs.

3. THEROTICAL BACKGROUND

Plastics have become common man's friend. It finds its use in every field. 12 million tones is the expected consumption for the current year. Plastic is a material created by man but it's also something that can't be destroyed. A majority of the waste created by humans contains plastic waste which ultimately chokes stray animals to death, clogs drain and only leads to mess. The clogged drains lead to flood while the plastic in the fields blocks germination, thereby preventing rainwater absorption.

Plastic waste when properly processed and incorporated into bituminous mixtures, can enhance the strength and durability of the resulting material. This is particularly important for road construction, where the pavement needs to withstand heavy traffic loads and environmental stresses. The inclusion of plastic waste can also improve the flexibility of bituminous mixtures, making them more resistant to cracking and



DESIGN AND PERFORMANCE ANALYSIS OF PASSIVE SOLAR ENERGY BUILDING

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Abstract:

Global climate change increases heat loads in urban areas causing health and productivity risks for millions of people. Air conditioning is growing rapidly. There has been a drastic increase in the use of air conditioning system for cooling the buildings all around the world. The last two decade has witnessed a severe energy crisis in developing countries especially during summer season primarily due to cooling load requirements of buildings. Passive cooling systems use non-mechanical methods to maintain a comfortable indoor temperature and are a key factor in mitigating the impact of buildings on the environment. The aim of this study is to test the usefulness of applying selected passive cooling strategies to improve thermal performance and to reduce energy consumption of residential buildings and critically analyzes various passive cooling techniques and their role in providing thermal comfort and its significance in energy conservation.

Keywords: Fundamentals of passive solar energy building, Elements of passive solar energy building, Types of passive solar energy building, Cavity wall, Guidelines.

1.Introduction

Modern societies are living on the Earth's resources at an increasingly rapid pace to satisfy certain needs and desires. In face of the present global climate change and related anthropogenic carbon emissions, the use of energy from fossil fuels becomes a main concern. At least three pathways to reduce energy consumption are at hand: first is to simply lower the demand and use

less energy; second is to be more energy-efficient in our energy-based technology and systems; and third is to substitute fossil fuels with renewable energy sources to meet the demand. The same approaches apply to buildings. This thesis takes the first pathway as a fundamental approach towards energy-saving in buildings. Its focus is on passive cooling to fulfill indoor comfort needs.

Changes in our climate system today in the form of global average surface temperature increase, global average sea level increase and snow cover decrease are understood to be driven more by human activities than natural processes. These drivers, including atmospheric concentrations of greenhouse gases and aerosols, land surface properties and solar radiation, individually alter the energy balance of the climate system by imposing either a warming effect or a cooling effect known as radiative forcing.

2.FUTURE SCOPE

Cavity wall consists of an outer brick or block leaf separated by an inner brick or block leaf by the means of an air gap called as cavity. In cavity walls, the air gap inhibits the transmission of heat into or out of the building as air acts as a bad conductor of heat. In composite walls, the cavities are filled with insulating materials by adjusting its thickness. Cavity wall stands for a double wall that comprises of two individual walls of masonry known as skins or leaves which are detached with an air space and connected jointly through metal ties at proper distances. These walls are normally used as outside

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USE OF WASTE PLASTIC WITH BACTERIAL COATING AS A SUSTAINABLE BUILDING MATERIAL IN CONCRETE

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Abstract: The use of plastic is increasing day by day, although steps were taken to reduce its consumption. The suitability of recycled plastics shredded as coarse aggregate in concrete and its advantages are discussed here. Tests were conducted to determine the properties of plastic aggregate density, specific gravity and aggregate crushing value. As 100% replacement of natural coarse aggregate (NCA) with shredded plastic is not feasible, partial replacement at various percentage were examined. Higher compressive strength was found with 5% NCA replaced concrete.

1. INTRODUCTION

Landfill sites are becoming overcrowded and expensive for waste disposal, efforts are made to minimize the quantities of materials that are delivered to landfills. The threat due to leaching of non-biodegradable materials like waste plastics, scrap tyres. If the production of waste cannot be prevented, then it is attractive to create an alternative use in another process instead of disposal. The benefits of plastic recycling can be economically advantageous, due to abundant availability lower cost for mixing with other variants like concrete, bitumen etc. The project aims at use of recycled plastic in concrete as a partial replacement of Coarse aggregate. The maximum percentage of aggregate replaced by shredded plastic as been determined based on detailed experimental study. The waste plastic of LDPE (Low density 2 poly Ethylene) is collected from Gadhinglaj southwest localities and mixed with OPC.

2. Objectives-

1. To compare the compressive strength and density of recycled shredded plastic used as coarse aggregate for constructional concrete with the conventional concrete.
2. To reduce the pressure on natural availability materials by replacing it with Shredded Recycled plastic.
3. To compare the physical characteristics of natural aggregate with Shredded Plastic.
4. To study the behavior of fresh and hardened concrete with Shredded waste plastic as aggregate and compare its properties to those of conventional concrete
5. To produce lightweight concrete for multi-purpose use.

3. Literature Survey

They have investigated the suitability of recycled plastic as partial replacement to coarse aggregate in concrete mix to study effect on compressive strength, modulus of elasticity, split tensile strength and flexural strength properties of concrete. Coarse aggregate from plastic was obtained by shredding the plastic pieces at required sizes and crushed to required size of aggregate. Their experimental results shown that plastic aggregate have low crushing (2.0 as compare to 28 for Natural aggregate), low specific gravity (0.9 as compare to 2.74 for Natural aggregate), and density value (0.81 as compare to 3.14 for Natural aggregate), as



Different Techniques of Chronic Disease Detection using Machine Learning: Survey

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Abstract: The pivotal role of data processing in the Knowledge Discovery in Databases (KDD), employing techniques such as classification, clustering, and association to extract knowledge from large datasets. The field of artificial intelligence has seen significant advancements in machine learning techniques. These developments show promise in supporting healthcare professionals, particularly in enhancing the accuracy of medical diagnoses. The synergy between machine learning and data mining is underscored for enhancing system efficiency. It also delves into the characteristics of datasets in machine learning algorithms, distinguishing between continuous, categorical, and binary features, and the distinction between supervised and unsupervised learning. This study investigates the application of computational methods, specifically data mining and machine learning algorithms, to forecast the occurrence of long-term health conditions. With a particular emphasis on one specific condition. The study highlights the significance of early detection for individuals who may be at higher risk due to several health factors. These risk factors include high blood pressure, heart-related issues, elevated glucose levels, or a genetic predisposition to the disease. By applying advanced analytical methods, the aim is to improve the accuracy and timeliness of identifying potential cases, thereby enabling more effective preventive measures and interventions. The paper underlines the differentiation between Chronic Disease and acute kidney disease, stressing the need for persistent reduction in kidney function over three months for the former. Overall, the paper highlights the critical role of predictive analytics in addressing chronic kidney disease as a significant healthcare concern along with different techniques used by researchers.

IndexTerms - Deep learning, Machine Learning, Chronic Disease detection, Electronic Medical Records (EMR)

I.INTRODUCTION

Data mining involves analyzing extensive datasets to extract meaningful patterns and useful information. This practice goes by various names, including knowledge discovery, information analysis, and data extraction. It serves as a crucial step in the broader field of Knowledge Discovery in Databases (KDD). Data mining employs several techniques to uncover patterns and extract useful information from extensive data collections. These methods include classification, clustering, and association analysis. Machine Learning, a rapidly growing discipline, focuses on the study and interpretation of complex, multivariate datasets. At its core, machine learning involves identifying patterns and similarities within data. This process has led to significant advancements in artificial intelligence. The field encompasses a wide range of processing methods, analytical techniques, and algorithms designed to learn from and make predictions or decisions based on data. Both data mining and machine learning play critical roles in transforming raw data into actionable knowledge, enabling organizations to make informed decisions and gain competitive advantages in various domains. Machine Learning holds the promise of assisting physicians in making nearly perfect diagnoses. Its applications are diverse, with data mining being a significant aspect. Combining machine learning with data mining enhances the efficiency of systems and their designs. In the context of machine learning algorithms, datasets can consist of continuous categorical, or binary features. Supervised learning involves instances with known category labels, while unsupervised learning deals with instances or categories without labels. Data scientists employ a range of learning techniques, including supervised and unsupervised methods, to collect and analyze comprehensive datasets. One key aspect of data processing is classification, which involves categorizing data points into predefined groups. The primary goal of classification is to develop models that can accurately predict

