

(54) Title of the invention : SOLAR STILL WITH LATENT HEAT STORAGE SYSTEM

(51) International classification :C02F0001140000, C02F0001040000, B01D0001000000, B01D0005000000, F03G0006000000

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(61) Patent of Addition to Application Number :NA
 Filing Date :NA

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 Filing Date :NA

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(57) Abstract :
 Annexure 3 Desalination systems powered by renewable energy provide a viable answer to this long-standing issue. Summers are often when water shortage rises, and desalination plants become more effective since solar radiation is higher than usual. Nature uses solar desalination to make rain, which is the world's primary supply of fresh water. Every available man-made distillation apparatus is a small-scale replication of this natural process. Because of the high costs of fossil fuels, difficulties in obtaining them, attempts to conserve fossil fuels, interest in reducing air pollution, and the lack of electrical power in remote areas, much attention has recently been paid to the use of renewable energy as desalination sources, particularly in remote areas and islands. The main objective of this work is to improve the yield of the distilled water in the solar still. The fin in the plate is having circular cross section and used for latent heat storage material to enhance the heat transfer rate. Due to this productivity will be increased when compare to the conventional solar still.

No. of Pages : 5 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241029155 A

(19) INDIA

(22) Date of filing of Application :20/05/2022

(43) Publication Date : 27/05/2022

(54) Title of the invention : PREPARATION OF MWCNTS HYBRID COMPOSITE WITH ORGANIC AND INORGANIC FILLERS

<p>(51) International classification :C08K0009060000, C08K0007240000, H01M0002160000, C08K0003040000, C08K0009100000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1) HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY Address of Applicant : HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. ----- Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1) Dr. K. SIVA Address of Applicant :PROFESSOR & HEAD/ MECH, HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. ---- ----- 2)Mr. S. ALAGAR Address of Applicant :ASSISTANT PROFESSOR/ MECH, HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. ---- ----- 3)RAJA BASKAR S Address of Applicant :HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. ----- 4)RAJ KUMAR M Address of Applicant :HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. ----- 5)RAKESHKUMAR S Address of Applicant :HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. ----- 6)VIGHNESH P Address of Applicant :HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. -----</p>
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(57) Abstract :
The primary goal of this investigation is to prepare a hybrid polymer composite and provide information on thermal properties of epoxy / MWCNT /alumina and coconut shell nano composite. The MWCNTs have good thermal properties and could make a direct involvement to improve the strength. The inter shell interaction are permanently controlled by Vander wall force so that MWCNTs possess high strength The effect of MWCNT not only improve Thermal properties but the homogeneous dispersion in host matrix, interfacial adhesion and internal strength of composite plays major role in improvement of MWCNTs However, the uniform dispersion of MWCNTs in the matrix depends on the functional group of MWCNTs in which the interfacial adhesion and the internal strength of the Nano composite structure have close relationship with the concentration and functionalized MWCNTs.

No. of Pages : 5 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241028541 A

(19) INDIA

(22) Date of filing of Application :18/05/2022

(43) Publication Date : 27/05/2022

(54) Title of the invention : DESIGN AN FABRICATION OF HOVERBOARD

(51) International classification :A63C0017010000, B60W0010080000, B60W0020000000, B60K0006460000, B60W0010020000

(86) International Application No :NA
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(57) Abstract :

Hoverboard Cart is a hybrid vehicle that runs using the power of motors that are connected to each wheel of the hoverboard. Motors are getting power from the battery used in the hoverboard. An Electric DC motor is a machine that converts electric energy into mechanical energy. The Electric motors give the necessary torque to the wheels and then it is controlled with the help of switches. Computers, sensors, and electric motors in the base of the hoverboard keep the device upright when powered on with balancing enabled. The hoverboard cart is a modified version of the hoverboard and is much safer than a hoverboard. It can bear weight up to 55 kg and can be used on-road and off-road. It is cheaper compared to other hybrid vehicles as simple components are used. The hardware is performing the balancing function in a hassle-free manner with the user standing on it. The algorithm's response is just perfect and is intuitive enough for any new user to perceive the how-to for this hardware. The skateboard posture provides more aerodynamic and grips advantage over the current two-wheel-hoverboards available in the market. The inbuilt battery level indicator displays accurate readings of the charge remaining in the battery.

No. of Pages : 5 No. of Claims : 3

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241028540 A

(19) INDIA

(22) Date of filing of Application :18/05/2022

(43) Publication Date : 27/05/2022

(54) Title of the invention : DESIGN AND DEVELOPMENT OF FIRE EXTINGUISHER DRONE

<p>(51) International classification :B64C0039020000, G05D0001000000, A62C0003000000, B64C0039000000, A62C0003020000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1) HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY Address of Applicant : HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. -----</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1) Dr. K. SIVA Address of Applicant :PROFESSOR & HEAD/MECH, HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. -----</p> <p>2)D. AMALRAJU Address of Applicant :ASSOCIATE PROFESSOR/MECH, HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. -----</p> <p>3)SREERAM KARIPURATH Address of Applicant : HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. -----</p> <p>4)SOURAV DAS K M Address of Applicant : HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. -----</p> <p>5)RAHUL PRADAD R B Address of Applicant : HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. -----</p> <p>6)SHARAF AMEN FIROZ Address of Applicant : HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY, VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE, TAMIL NADU, INDIA - 641032. -----</p>
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(57) Abstract :

According to NCRB, A total of 18351 fire accidents have been reported in 2020. These are mainly due to the short circuiting of circuits and gas cylinders. Overall of the accidents are residential area based. We can also infer that there has been a significant rise in the probability of fire accidents on the skyscrapers in the recent years. With our current methodology we are not much equipped to extinguish fire in such elevated areas. Unfortunately, in most of the accidents the tolls seem too high. Most of them have lost their faithful beings and even their close ones. In order to tackle this circumstance, we have come up with a solution which even saves the life of the firefighters who fight the fire at their lives at stake. We have used the principles of aviation, radio frequency to bring up with a drone well equipped with anti-fire measures such as fire sensor, laser targeting, autonomous inspections and manual drive using GPS etc. are some of the features which is used to detect the fire and to put it off. Our project, with its sensor will detect the fire and produce an alarming sound and sends a signal to the aviator, with this the first phase is completed, then without further delay, The drone will release a sphere of mono ammonium phosphate combination which gets explode and the compound diffuses, thus preventing the casualties and the spread of fire. Additionally, the project has a fire extinguisher, Attached to drone which spray mono ammonium phosphate and potassium-bi-carbonate combination with carbon-di-oxide or nitrogen that react with atmosphere to prevent spread of fire. This drone is equipped with 360kv motor which can provide maximum thrust of 3kg and we have used four of them and the total thrust is about 12kg and it has stand by time of 25min in air and if the battery is at critical condition the drone tends to return to the aviator. Furthermore, the drone is economical as it built in a small budget.

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(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241029477 A

(19) INDIA

(22) Date of filing of Application :23/05/2022

(43) Publication Date : 03/06/2022

(54) Title of the invention : DESIGN AND FABRICATION OF ADVANCE SOLAR SEED SOWING MACHINE

(51) International classification :A01C0007020000, A01C0007000000, A01N0043120000, A01B0001020000, A01C0007120000

(86) International Application No :NA
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(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
Filing Date :NA

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(57) Abstract :

In today's era all sectors are moving towards the rapid growth using many advanced technologies. Of all these sectors, agriculture is also one of them. In order to meet the increasing demand of food, farmers have to implement advanced techniques so that the soil texture is not affected and the overall food production is increased. Hence, in this project we aim at designing and fabricating a iot seed sprayer machine. Seed sowing process is usually carried out by humans using manual power. In this seed sprayer machine project, seed in a hopper gets sprayed by means of fan or blower directly to the land without any manual effort. Using this process, the seeds are fed in the land during the time of plough. The main advantage of using this technique is that, it reduces the time of seed to land and reduces human efforts. This innovative mechanical project of seed sowing equipment can save more time for sowing process and also it reduces a lot of labour cost. This agro sprayer project is very helpful for small scale farmers.

No. of Pages : 5 No. of Claims : 4

(54) Title of the invention : PERFORMANCE ANALYSIS OF HEAT PUMP DRIER FOR AGRO-PRODUCTS

(51) International classification :F26B0021000000, F26B0023000000, A23B0007155000, A23B0007010000, A23B0007154000

(86) International Application No :NA
 Filing Date :NA

(87) International Publication No : NA

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(62) Divisional to Application Number :NA
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(57) Abstract :
 The use of heat pump drying system for agricultural products to preserve fruits, vegetables and other has been proven to be cheap, reliable and environmentally friendly. For drying of most agriculture product especially fruits and vegetables requires hot air in the temperature range of 50 - 70 degrees for the safe drying. Vegetable and fruits form an integral part of the human diet. Post-harvest losses of approximately 40%, have become a principle challenge and there is a transient ability to preserve and store foods for offseason consumption due to the lack of proper storage systems. Heat pump drying, is increasingly used in food industries nowadays owing to its low energy consumption, less quality loss, high thermal efficiency, and high drying The need for drying biological material is very important in the agro-food industry, producing high quality and shelf stable products. This has two drawbacks, the first is the cost of energy, and the second is the environmental degradation that is associated with some types of energy production. In response to these concerns, there has been much work on novel drying techniques have to be improve energy. This system ensures dryers and drying process that are more economical and less harmful to the environment.

No. of Pages : 5 No. of Claims : 4

(54) Title of the invention : ANALYSIS AND IMPROVING THE HARDNESS OF EN353 STEEL USING CRYOGENIC TREATMENT

<p>(51) International classification :G06F0030230000, G06F0017130000, G06F0111100000, G06F0017120000, G06F0017110000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Hindusthan College of Engineering and Technology Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Dr.K.Siva Address of Applicant :Professor& Head /Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 ----- --</p> <p>2)K.Sriharrish Address of Applicant :Assistant Professor/Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 ----- --</p> <p>3)Aravinthan.K Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>4)Boopathi.P Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p>
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(57) Abstract :

The finite element method (FEM) is a numerical technique for finding approximate solutions to partial differential equations (PDE) and their systems, as well as (less often) integral equations. In simple terms, FEM is a method for dividing up a very complicated problem into small elements that can be solved in relation to each other. FEM is a special case of the more general Galerkin method with polynomial approximation functions. The solution approach is based on eliminating the spatial derivatives from the PDE. This approximates the PDE with a system of algebraic equations for steady state problems, a system of ordinary differential equations for transient problems. These equation systems are linear if the underlying PDE is linear, and vice versa. Algebraic equation systems are solved using numerical linear algebra methods In solving partial differential equations, the primary challenge is to create an equation that approximates the equation to be studied, but is numerically stable, meaning that errors in the input and intermediate calculations do not accumulate and cause the resulting output to be meaningless. There are many ways of doing this, all with advantages and disadvantages.

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(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241028267 A

(19) INDIA

(22) Date of filing of Application :17/05/2022

(43) Publication Date : 27/05/2022

(54) Title of the invention : EXPERIMENTAL INVESTIGATION OF MACHINING PERFORMANCE ON SUPER ALLOY

<p>(51) International classification :B23Q0011100000, B28D0005000000, B28D0005040000, C10M0177000000, B24B0055020000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Hindusthan College of Engineering and Technology Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Dr.K.Siva Address of Applicant :Professor& Head /Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 ----- --</p> <p>2)K.Sriharrish Address of Applicant :Assistant Professor /Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 ----- --</p> <p>3)Sam Morris J Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>4)Siva S Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>5)Vasanth S Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>6)Rajalingam R Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p>
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(57) Abstract :

The present research work aimed at investigating the use of MWCNT nanoparticles mixed with base cutting fluid under MQL environment. Both finishing and roughing mode of machining were considered to determine the suitability of usage of nanofluid lubrication. Following conclusion can be inferred from the current study. Addition of MCWNT with mineral oil nanofluid to the base cutting fluid results in remarkable reduction in cutting forces, dynamic fluctuation of cutting forces, cutting temperature, tool wear, and surface roughness as compare to conventional MQL (without additives). 5 vol% exhibits best performance while further increasing of Al₂O₃ nanoparticles concentration worsened the performance. Chips obtained under conventional MQL was mostly continuous in nature while those obtain under nanofluid lubricating environment were of broken type. Since nanofluid lubrication has clearly demonstrated significant decrease in consumption of cutting fluid as well as the cutting energy or cutting power while improving surface quality, this technique has been established as a environmentally friendly green manufacturing or sustainable manufacturing.

No. of Pages : 5 No. of Claims : 5

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241031050 A

(19) INDIA

(22) Date of filing of Application :31/05/2022

(43) Publication Date : 10/06/2022

(54) Title of the invention : DESIGN AND FABRICATION OF TWO AXIS FABRICATION TABLE

(51) International classification :B29C0064386000, H01L0027146000, H01L0021033000, B22F0003105000, H01Q0001380000

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(57) Abstract :

The design and implementation of Two axis welding and fabrication table by using two electric motors, with accuracy and high payload is the main objective. The system operates with two electrical motor and electrical energy with high energy efficient. Here two minimum parts that are Main shaft and the Chuck are used. One end of the Main shaft have 4inch Sprocket which is connected to the gearbox sprocket through Chain. The chuck has four bolt and nut, it will be holding the job to be weld. The aim is to create a 2 - axis degree rotary turn fabrication table and also to making high accuracy products by using welding process by numerical control principle which is highly accuracy in all axis. Also, two D.C motors are controlled by the switches along with control unit. To rotate . the chuck on the table top welding turntable, a geared motor arrangement is used. This motorized chuck is mounted on a horizontally-movable arrangement to keep ' the work in a suitable position for welding and cutting operations.

No. of Pages : 5 No. of Claims : 5

(54) Title of the invention : SOLAR WATER HEATER WITH LATENT HEAT STORAGE

(51) International classification :F24S0060300000, F24S0060000000, B60C0015000000, F24S0025700000, F24S0023770000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :

Annexure 3 Solar water heating (SWH) is a safe, dependable, and cost-effective way to harness solar energy to provide 55-75 percent of hot water demands. Many nations are already using SWH technology to minimise power expenses in both business and residential settings. SWH systems may now be run efficiently in every geographical area and climatic region across the world, thanks to technological advancements. However, the system's installation and general performance remain suspect. This study aims to critically assess the current technological breakthrough, as storage tank/integrated collector storage solar water heaters. To improve the system's performance, extensive experimental and research work was carried out with the appropriate technologies, including optimum designs, geometric adjustments, and simulation work. In this work, solar water consists of flat plate collector with rectangular tube where Nano fluids stored and it helps to increase the heat . transfer rate and obtain the hot water yield than conventional water heater.

No. of Pages : 5 No. of Claims : 4

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(54) Title of the invention : Respiratory Medicine Medical Spraying System

(51) International classification :A61M0031000000, A61M0011000000, A01M0011000000,
A61M0005303000, A47B0067020000
(86) International Application No :PCT//
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(61) Patent of Addition to
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(57) Abstract :

[08] The utility model describes a medical sprayer used in the field of respiratory medicine, comprising a drug delivery tube, a movable inner sleeve, at one end of which the drug delivery tube is connected to a telescopic tube; One end of the spray head is connected to the drug storage tank; the bottom of the medicine storage container is connected to the air blast device; the medicine storage container is connected to the double gauge medicine bottle connecting tube; the outer ring of the drug delivery tube near one end of the spray head rotates and connects to the first ring; A nut is placed on the outer ring of one end of the drug delivery tube next to the drug storage container; the medicine supply tube is provided with an external thread corresponding to the nut; the side of the nut next to the first ring is rotatably connected to the second ring; Two support plates are located between two rings; one end of each base plate is pivotally attached to the first ring via the support rod and the other end is pivotally fixed to the second ring via the other support rod; The distance can be adjusted according to the patient's mouth opening; The drug delivery tube can be rotated directly in the mouth to reposition the injection if necessary. The utility model refers to the technical field of respiratory medicine, in particular a type of medical sprayer for respiratory medicine. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3]

No. of Pages : 19 No. of Claims : 4

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(54) Title of the invention : Online predictive maintenance of electric motors using Internet of Things

(51) International classification :H04W0084180000, G05B0023020000, G06Q0010000000, G08B0021180000, G06N0007000000

(86) International Application No Filing Date :PCT// :01/01/1900

(87) International Publication No : NA

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(57) Abstract :
 [014] This work aims to present a proposal for a system for monitoring electrical equipment in a production line, aiming at carrying out predictive maintenance through early detection of failures. The system measures the electric current consumed by such equipment, using a wireless sensor network, supervised by a concentrator node, which in turn processes the data through current signature analysis techniques. When a deviation in current consumption behavior is detected, correlated to some type of potential failure, the system generates alarms and additional information to the maintenance supervisor, who, in a planned way, proceeds with the maintenance of the equipment without prejudice to production. This predictive maintenance approach is part of the Internet of Things (IoT) context. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5]

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(54) Title of the invention : ITERATIVE TECHNIQUE TO SOLVE FRACTIONAL DIFFERENTIAL EQUATIONS APPLIED IN INDUSTRY

(51) International classification :G06F0017130000, G06F0030367000, G06Q0040060000, A61L0031140000, G06F0111100000

(86) International Application No :PCT// Filing Date :01/01/1900

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA Filing Date :NA

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(57) Abstract :
 ITERATIVE TECHNIQUE TO SOLVE FRACTIONAL DIFFERENTIAL EQUATIONS APPLIED IN INDUSTRY A method to solve fractional differential equations applied in an industry. The method includes solving, using the theory of FDEs, the governing equation in closed form and numerical solutions are also determined using a simple but efficient central difference scheme. Enabling the shown how knowledge of the exact and numerical solutions design of the device to be optimized. Offering a fractional diffusion models multiple possibilities for generalizing Flick's law in a consistent manner in order to account for history dependence and nonlocal effects. Proving particularly well-suited for dealing with the numerical difficulties inherent to fractional differential operators. Developing a numerical framework based on the least-squares spectral element method for studying and comparing anomalous diffusion models in pellets. FIG.1

No. of Pages : 15 No. of Claims : 1

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(54) Title of the invention : IOT, CLOUD COMPUTING BASED INTELLIGENT AUTOMATION AND SAFETY SYSTEM FOR TRANSPORT SECTOR USING WSN

(51) International classification :H04L0029080000, H04W0004700000, B60R0021000000, B60H0001320000, F41A0017080000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :

In every manner, the Internet of Things is simplifying people's lives (IoT). It has an infinite number of applications. The Internet of Things (IoT) concept enables the connection of items, tools, and devices over the Internet. The Internet of Things has the potential to be used in a range of industries, including smart cars and the benefits they give in terms of safety, security, navigation, and fuel efficiency. The aim is to develop a procedure for resuscitating victims of traffic accidents. As previously said, in order to accomplish this goal, we want to develop and implement a system that prevents accidents but also responds effectively when they do occur. This research is expected to address the factors that contribute to fatal crashes while also offering methods to ensure passenger safety. It is unthinkable to imagine a civilization without transportation in which remote regions are accessible and travel time is significantly reduced. On the other hand, the ever-increasing number of automobiles on the road creates a slew of complications that cannot be neglected. The initiative is aimed at eradicating several common causes of automobile accidents, as well as post-crash prevention strategies.

No. of Pages : 13 No. of Claims : 7

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(54) Title of the invention : Innovative Method for monitoring of rigid pavement in bike path

(51) International classification :G07C0005080000, G06T0007000000, G07C0005000000, H04L0029060000, G01H0001000000

(86) International Application No :PCT//
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(87) International Publication No : NA

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(57) Abstract :

[015] Currently, the condition of the pavement is assessed through visual inspection, which is an outdated and subjective approach that does not effectively address maintenance issues. Since the condition of bike surfaces can manifest itself in the form of bicycle vibrations, the Bike path Monitoring System (BPMS) is proposed, the task of which is to objectively assess the condition of the surface of the bike surface by measuring these vibrations with sophisticated sensors built into modern smartphones. By collecting this vibration data, combined with location data from cyclists' smartphones, BIMS will be able to continuously track asset health data in relation to bike pavement surfaces. Valuable information from BIMS will help highway managers make better use of their limited resources in regards to operating and maintaining, repairing and auditing the cycling environment. This study provides a solid foundation for BPMS by describing all the processes involved and what they entail. This study also focused on the feasibility of the BIMS evaluation component, first conducting a case study that examined whether the current quality of the sensor is sufficient to provide reliable data for BIMS. Based on five tests, this case study found that smartphone motion sensors are capable of measuring accelerations with high accuracy, and location sensors provide GPS data with an acceptable level of accuracy. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5]

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(54) Title of the invention : E-WASTE MANAGEMENT SYSTEM BY USING INTERNET OF THINGS AND COLLECTION VENDOR MACHINE

<p>(51) International classification :C22B0007000000, B09B0005000000, B09B0003000000, G06Q0010000000, G06Q0050260000</p> <p>(86) International Application No :PCT// Filing Date :01/01/1900</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Dr.S.Manimegalai Address of Applicant :Assistant Professor & Head, Department of Civil Engineering, University VOC College of Engineering, Thoothukudi Pin: 628 008. State: Tamilnadu Country: India ----- 2)Dr.D.Jayasutha 3)Mrs. B. Gomathi 4)Dr.Ravi .E 5)Dr. Pavankumar Ravindra Sonawane 6)Mr.Sandip Ashok Jadhav 7)Mr. Rohit Sahu 8)Prof G.D.Shelake 9)Ms. Shaina 10)Mr. More Sunil Anil 11)Mr. L. Karthick Name of Applicant : NA Address of Applicant : NA (72)Name of Inventor : 1)Dr.S.Manimegalai Address of Applicant :Assistant Professor & Head, Department of Civil Engineering, University VOC College of Engineering, Thoothukudi Pin: 628 008. State: Tamilnadu Country: India ----- 2)Dr.D.Jayasutha Address of Applicant :Associate professor, Department of Computer Science and Engineering Arjun College of Technology, Thamaraikulam, Coimbatore Pin: 642120 State: Tamilnadu Country: India ----- 3)Mrs. B. Gomathi Address of Applicant :Assistant professor, Department of Artificial Intelligence and Data Science, Arjun College of Technology, Thamaraikulam, Coimbatore Pin: 642120 State: Tamilnadu Country: India ----- 4)Dr.Ravi .E Address of Applicant :Professor & Head, Department of Civil Engineering, Velalar College of Engineering and Technology, Thindal, Erode Pin: 638012 State: Tamilnadu Country: India ----- 5)Dr. Pavankumar Ravindra Sonawane Address of Applicant :Associate Professor, Department of Mechanical Engineering, JSPM's Rajarshi Shahu College of Engineering, Tathawade, Pune Pin: 411033 State: Maharashtra Country: India ----- 6)Mr.Sandip Ashok Jadhav Address of Applicant :Assistant Professor, Department of Mechanical Engineering, JSPM's Rajarshi Shahu College of Engineering, Tathawade, Pune Pin: 411003 State: Maharashtra Country: India ----- 7)Mr. Rohit Sahu Address of Applicant :Assistant Professor, Department of Civil Engineering, Dr. K. N. Modi University Address - INS-1, RIICO Industrial Area Phase - II, Newai, Distt. Tonk, Rajasthan Pin:304021 State: Rajasthan ----- 8)Prof G.D.Shelake Address of Applicant :Assistant Professor, Department of Mechanical Engineering, JSPM's Rajarshi Shahu College of Engineering, Tathawade, Pune Pin: 411033 State: Maharashtra Country: India ----- 9)Ms. Shaina Address of Applicant :Assistant Professor Department of Computer Science and Engineering GNA University, Hargobindgarh, Phagwara-Hoshiarpur Road, Phagwara, Punjab Pin:144401 State: Punjab Country: India ----- 10)Mr. More Sunil Anil Address of Applicant :Assistant Professor, Department of Mechanical Engineering JSPM's Rajarshi Shahu College of Engineering, Pune Pin: 411033 State: Maharashtra Country: India ----- 11)Mr. L. Karthick Address of Applicant :Assistant Professor Department of Mechanical Engineering, Hindusthan College of Engineering And Technology, Valley Campus, Pollachi Highway. Coimbatore Pin:641 032 State: Tamilnadu Country: India -----</p>
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(57) Abstract :
E-Waste management system by using Internet of Things and collection vendor machine Abstract: The disposal of electronic waste (E-waste) is a challenging concern since the electronic equipment contains hazardous substances. In a personal computer, there may be lead in the cathode ray tube (CRT) and soldering compound, mercury in SWITCHES, and cobalt in steel components, among other equally toxic substances. Improper E-waste management will harm the environment and human health. Hence, an appropriate waste management technique for saving the environment and natural resources is the need of the hour. In this paper, we proposed the IoT-based collection vendor machine (CVM) for E-waste management. The Customer will have registered with the proposed system to obtain a QR code. QR code consists of all necessary information related to the customers. The Customer will attach this QR code with his E-waste item and dump it in CVM. Eventually, the Collector will collect E-waste items from CVM and deposit in the warehouse for recycling and billing. The proposed prototype of CVM will use ultrasonic sensors to measure the capacity of CVM at a particular instant and send an alert message to the concerned authority at a certain threshold point. Arduino offers a platform on which one can mount the sensors and fetch the sensor's data. Proposed CVM provides us with more economical substitutes for imported devices, which cost us enormously. The proposed CVM is highly tracked and secure system than random 'kabariwala' who is unaware of the proper disposal method of toxic waste.

No. of Pages : 14 No. of Claims : 7

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(54) Title of the invention : Evaluation of the influence of RCA in increasing the mechanical strength of cementing composites

(51) International classification :C04B0028040000, G01N0033380000, C04B0111000000, G01N0011000000, C04B0028020000

(86) International Application No :PCT//
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(61) Patent of Addition to Application Number :NA
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(57) Abstract :
 [07] The aim of this study was to investigate the influence of RCA on the rheological and mechanical properties of self-compacting concrete (SCC). For this, four different compositions of SCC were analyzed, one of them produced only with natural aggregates. The other mixtures used recycled fine and/or coarse aggregates to replace natural aggregates, at a content of 20% by mass. The rheological characterization of the cement paste and mortars for the production of SCC was also carried out, by means of rotational rheometry. The rheological characterization of pastes, mortars and concretes is a way of evaluating the behavior of these composites in the fresh state, providing useful information that will help in the dosing process and quality control. The properties of fresh concrete were evaluated through the tests of spreading, flow time t500 and in the V hopper, passing ability and resistance to segregation. In the hardened state, the compressive and tensile strengths by diametral compression and static modulus of elasticity were determined. Through the results obtained, it was possible to verify loss of fluidity in mortars and concretes that used RCA. On the other hand, there was no significant reduction in the mechanical properties of concrete produced with 20% recycled coarse or fine aggregates. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5] [FIG. 6] [FIG. 7][FIG. 8][FIG. 9][FIG. 10][FIG. 11]

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(54) Title of the invention : EFFICIENT EVOLUTION OF CRACK SIZE ESTIMATE WITH FAST BOUND CRACK

(51) International classification :H03G0003000000, G06F0017100000, G06F0007020000, G06F0030200000, G06F0017130000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(57) Abstract :

This paper presents the application of the Fast Bounds Crack methodology to generate upper and lower bound functions for crack size evolution models. The performance of this methodology was evaluated through the relative deviation and computation time relative to the approximate numerical solutions obtained by the open 4th order Runge-Kutta method (RK4). A maximum relative deviation of 5.92% was reached and the calculation time for the analyzed samples was 130000 times greater than the time obtained by the RK4 method. Based on the arithmetic mean of the upper and lower dimensions obtained in the methodology applied in this study, an engineering application has also been made to obtain an approximate numerical solution in cases where the law of evolution is unknown. The maximum relative error found in this application is 2.08%, which proves the effectiveness of the Quick Boundaries Crack methodology.

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(19) INDIA

(22) Date of filing of Application :17/05/2022

(43) Publication Date : 27/05/2022

(54) Title of the invention : THE EFFECT OF GLASS TEXTILE ON THE SHEAR BEHAVIOR OF GLASS FIBER REINFORCED POLYMER- REINFORCED CONCRETE BEAMS

(51) International classification :G06F0030230000, E04C0005060000, E04C0005070000, G01N0017000000, E04B0001160000
(86) International Application No :PCT//
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(57) Abstract :

The effect of glass textile on the shear behavior of glass fiber reinforced polymer- Reinforced concrete beams Abstract: This study summarises the results of an experiment that examined the effect of fiber-reinforced polymer (FRP) rebars on the performance of concrete beams. Glass cloth is substituted for transverse reinforcement. In an experiment, there will be eight rectangular concrete beams with reinforcements made from various materials. The experimental design incorporates factors such as the aspect ratio a/d, the type of transverse shear reinforcement, the type of transverse reinforcement, and the number of glass textile layers. The distinction between beams having aspect ratios of 2.3 and 2.8 is determined by examining them separately. According to the results, the behaviour of concrete beams reinforced with glass cloth is comparable to the behaviour of concrete beams reinforced with FRP transverse reinforcements. The shear performance of the tested beams improves with increasing amounts of textile reinforcement. The fabrication of these beams has no effect on their shear behaviour. On the basis of the test results, a finite element model was developed and evaluated. The shear behaviour of concrete beams reinforced with FRP reinforcing bars can be measured, according to a parametric analysis.

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(54) Title of the invention : Automobile Seat Design Ergonomics and Whiplash Protection system

(51) International classification :B60N0002427000, B60N0002420000, A41D0013050000,
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(57) Abstract :
 Automobile Seat Design Ergonomics and Whiplash Protection system Abstract: Due to the rapid advancement of car performance, greater safety regulations have accelerated the industry's growth. There is a direct correlation between where you sit in an automobile and the vehicle's safety and reliability. When it comes to racing, drivers' vision, weariness, and comfort all play a role in who wins. Even though the seat is supposed to be more comfortable, numerous people have died or been injured in collisions involving quick accelerations and decelerations. Due of the driver's body's flexibility, when the seat is fastened in place, it transmits all of the crash's shock to them. All of these pressures are absorbed by the body, resulting in serious injury and, in some cases, death. Whiplash injuries can be fatal, although they are more frequently than not associated with long-term damage to the cranial spine and respiratory problems. It occurs when a neck ligament is torn or injured, impairing a person's ability to move his or her neck for the remainder of their lives. When slapped from behind, it accelerates. When the knocked-out automobile accelerates and decelerates rapidly, it travels at a high rate of speed. As long as this is the case, the inertia of the driver and the restrained seat will remain constant. As a result, the body absorbs the entirety of the stress, rather than the frame or seat, which would normally carry the force of a fall or bump. According to the article cited in the text, there is an ergonomic seat with a novel whiplash and collision safety system that combines both a basic whiplash absorption system and a huge collision absorption system. The seat's subsequent portion is separated into three primary areas. It is positioned in such a way that it can act as a sliding support for your neck. This section contains two subsections. The neck support is connected to the main seat through a hinge. This means that the principal seating stock and a back-supporting frame are hinged together in the seat's structure. Two torsional springs on each side of a hinge lift the rear support structure. This offers the driver with the finest shock absorption and smoothest support possible. Seats are held in place when dragged. A spring guarantees that the backrest structure goes backward after being struck. It is the major system responsible for absorption and protection of the neck and head beneath the backrest framework. Steel constraints are essential to allow for the use of lightweight materials such as carbon fibre, aluminium, and hard plastic fibre throughout the structure. When driving on a highway or over a long distance, you may wish to avoid driving with your hands wide out. Maintain straight hands while driving on a highway, where steering is minimal and harsh steering is uncommon. Because you maintain a straight grip on your hands for an extended amount of time, this results in elbow strain. Any car, regardless of its power or utility, must have a comfortable driving position. Numerous elbow problems are caused by chronic elbow strain that might last years, if not decades. Osteoarthritis, which is caused by strained joints, has become more prevalent and dangerous in recent years. Ligaments become inflamed as a result of repeated stretching or slight injury. Individuals who repeatedly strain their elbows may develop synovial fluid leaks and elbow cysts. When the immune system attacks its own cells, auto immune disease can occur, which is currently considered incurable. As a result, your body begins fighting against itself. This is referred to as auto-immune disease. The accompanying video details an ergonomic retractable arm/elbow rest, which is especially important on the highway. They can be reintroduced to their original site in cities or areas with jagged edges. There are several methods for prolonged sitting. Sitting over an extended amount of time places your neck, spine, and pelvis in natural-looking positions. Raising your legs lowers pressure on your knee joint, lower back, and tummy.

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(54) Title of the invention : Automatic brake system for controlling a vehicle using AI and ML model

(51) International classification :B60T0007120000, B60T0017180000, G07F0017240000, B60T0008175500, G06N0003020000

(86) International Application No Filing Date :PCT// :01/01/1900

(87) International Publication No : NA

(61) Patent of Addition to Application Number Filing Date :NA :NA

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(57) Abstract :
 ABSTRACT AUTOMATIC BRAKE SYSTEM FOR CONTROLLING A VEHICLE USING AI AND ML MODEL A method for automatic brake system for controlling a vehicle using Artificial intelligence and Machine Learning model. The method includes brake actuation system for actuating the 5 automatic brakes to supply the braking effort to the wheels, brake control system for controlling the brake actuation means to supply an automatic component of the service braking effort. The brake control system is arranged, when standstill of the vehicle is detected and before the parking brake is engaged, to cause the brake actuation to supply the automatic component of the service braking effort only to the subset of the plurality of 10 wheels. Collecting the real time inputs are with the help of ultrasonic sensor and yaw rate sensor. The ultrasonic sensor is attached to the front of the vehicle and it detects the occurrence of obstacle in front of the vehicle thereby sending and receiving ultrasonic waves from the sensor. Processing the input values with the help of Artificial Neural Network multilayered algorithm which inturn takes decision based on the weightage values given by 15 the user and applying a distributed brake force to each wheel of the vehicle based upon the decision values from the decision layer. FIG.1

(54) Title of the invention : AI BASED 3-WHEELED HIGH-POWER MOUNTAIN E-BIKE

(51) International classification :B60L000800000, B62M0006600000, B60K0016000000, B62M0006850000, B65D00085680000

(86) International Application No :NA
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(57) Abstract :
 AI based 3-wheeled high-power mountain e-bike Abstract: In many parts of the world, the use of battery-powered electric bikes has enabled zero-emission transportation in numerous areas. Economic growth has resulted in an increase in city approvals and expansions, but obtaining these permits takes time and effort. As a result, our electric two-wheelers are the greenest mode of transportation available. Per mile driven, they consume less fuel and emit less pollution. As our cars' speed and range improve, we'll be able to move around and take advantage of new opportunities. Despite the fact that many four-stroke motorcycles are being phased out in favour of pollution-free battery-powered cars, many people dislike them because battery charging takes so long and there aren't enough charging stations. Bicycles and pedestrian infrastructure have long been considered the best modes of urban transportation. There is ample evidence that pedal power alone will not be sufficient to completely eliminate people's reliance on gasoline and diesel vehicles. Environmentally damaging modes of transportation must be investigated to ascertain why they continue to be used and what can be done to change this. With this project, we hope to create a solar-powered two-wheeled motorcycle. This project aims to develop a zero-emission solar-powered car. Individuals will construct solar electric cars as part of this project in order to offset the carbon dioxide emissions produced by fossil-fuel vehicles. We have made every effort to make the automobile a symbol of a better world. With the assistance of incoming power and solar panels, this project can obtain as much energy as possible from both sources. This motor is attached to the wheel and is used to propel the vehicle. It is rechargeable via a small, lightweight battery pack. The concept of a solar-powered electric bicycle is entirely novel. A significant amount of effort will be required to ascertain the issue and weakness in order to complete this project. Electric cars emit significantly less CO2 than conventional cars, which is why the primary objective of this project is to create a model of one that does not yet exist in the real world. We have made every effort to make the automobile a symbol of a better world. Additionally, the project's objective is to demonstrate how this vehicle can expedite the process of making the world a better place. To be successful, it must take into account the primary mover, storage arrangements, and how this new vehicle outperforms existing models.



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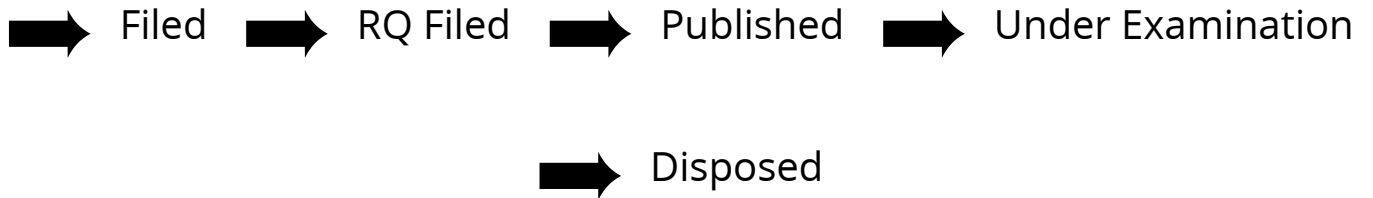
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TITLE OF INVENTION	MANUFACTURING OF LIGHT WEIGHT CONSTRUCTION PANEL BY RECYCLING THERMOCOL
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(19) INDIA

(22) Date of filing of Application :17/05/2022

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(54) Title of the invention : DESIGN AND FABRICATION OF COMPRESSED AIR DRIVER VEHICLE

<p>(51) International classification :C10L0001020000, C10L0001180000, C10L0001000000, C10L0001120000, B60L0058300000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Hindusthan College of Engineering and Technology Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Dr.K.Siva Address of Applicant :Professor& Head /Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>--</p> <p>2)Dr.J.Manikandan Address of Applicant :Professor /Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>3)Raj kumar R Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>4)Sanjay Raja.K. Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>5)Surya A.K Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>6)Yuvaraj.G Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p>
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(57) Abstract :

One of the major problems most developing countries facing now a days is pollution and the major source of which is automobiles running on the roads. Concerning resource availability there has been a strong warning that petroleum resources may be depleted in the relative near future. Gasoline which has been the main source of fuel for the history of cars, produces carbon monoxide, nitrogen oxides and unburned hydrocarbons which are the main pollutants and are responsible for bad effect of pollution. There comes need to think about alternatives such as Biodiesel and Natural gas, electric cars, hybrid cars, hydrogen fuel cells but these alternative fuels also have some drawbacks. One possible alternative fuel is the compressed air. Fossil fuels (i.e., petroleum, diesel, natural gas and coal) which meet most of the world's energy demand are being depleted rapidly. Also, their combustion products are causing global problems, such as the greenhouse effect, ozone layer depletion, acid rains and pollution which are posing great danger for environment and eventually for the total life on planet. These factors are leading automobile manufactures to develop cars fuelled by alternatives energies.

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(21) Application No.202241028197 A

(19) INDIA

(22) Date of filing of Application :17/05/2022

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(54) Title of the invention : SOLAR POWERED SMART BENCH

(51) International classification :A47C0011000000, H02J0007350000, G09F0027000000, H02J0007000000, A47C0007720000

(86) International Application No :NA
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(57) Abstract :

Annexure 3 Advantages of such strategies in public locations like public parks, university campuses, transportation stations, etc. On the alternative hand, international locations and governments can advantage from solar electricity. This smart bench will bring about a sun-powered charger that can offer electricity out of the sunlight. Regular benches which you see to your community are static, imparting not anything else but an area to take a seat down and wonder. Installing modern Smart Solar Benches that provide loose charging offerings to your smart phone and mild all through the night time will enhance visitors' frequency and satisfaction. Smart Solar Bench has numerous integrated USB ports for charging all varieties of clever devices (phones, tablets, watches, etc.). You can also charging electric vehicle that's included in the system. Project of solar-powered charging bench has the potential of charging both IOS/ android phones of public phones. A solar bench that has a good appearance and modern required charging Solution to public/users also provides suitable and comfortable space to be rest on.

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(54) Title of the invention : VERTICAL AXIS WIND TURBINE FOR WIND ENERGY BASED POWER GENERATORS

(51) International classification :F03D0003060000, F03D0009250000, F03D0080700000, F03D0015100000, F03D0007020000

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(87) International Publication No : NA

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(57) Abstract :
 The present invention provides an airflow directional member for a vertical axis wind turbine to reduce drag at trailing vane and improve the overall efficiency of the same. Said vertical axis wind turbine (1) consists of a power generator (2), a support structure (3), a shaft (4), a gearbox (5), a rotor (11), and an airflow directional member (21). Said airflow directional member (21) consists of a plurality of support structures (22a, 22b) with a plurality of tail guide members (23a, 23b) and a deflector (24). The airflow directional member (21) is mounted on the shaft (4). FIG-4

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(12) PATENT APPLICATION PUBLICATION

(21) Application No.202141049995 A

(19) INDIA

(22) Date of filing of Application :01/11/2021

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(54) Title of the invention : FIRE SPRINKLER

(51) International classification :A62C0035680000, A62C0035600000, F16K0001320000, F16K0011070000, A62C0037140000

(86) International Application No :NA
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(57) Abstract :

ABSTRACT FIRE SPRINKLER The present invention provides an actuation device for operating sprinkler in fire sprinkler system. Said fire sprinkler (1) consists an actuation device (11), said actuation device (11) comprises of a valve body (21) and an actuation unit (31) wherein said valve body (21) consists of a tubular conduit portion (22), a plurality of plugs (23a, 23b), a plurality of inlet ports (26, 29, 30), a chamber (31), an outlet port (32), a plurality of grooves (33a, 33b), a plurality of end plates (34a, 34b) and a plurality of circlips (35a, 35b). The actuation unit (41) consists of a piston (42), a plurality of O-rings (43a, 43b, 43c), a thermo sensitive element (44), a spring (45), a spring retainer (46), a stud rod (47) and a plurality of fasteners (47). The actuation device (11) automatically close and open the sprinklers using a mechanical operable mechanism. FIG-1

No. of Pages : 23 No. of Claims : 10

(51) International classification :G06F0030230000, B29C0048050000, C22C0047080000, B60N0002680000, C21D0001340000

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(62) Divisional to Application Number :NA
 Filing Date :NA

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(57) Abstract :
 EN8 has good identical metallurgical constructions in its heat-treated forms, resulting in reliable machining qualities. On sections bigger than 63mm, good heat treatment results are still possible, although it should be noted that mechanical qualities begin to deteriorate around the Centre of the bar. As a result, it is advised that larger quantities of EN8 be provided untreated, with any heat treatment occurring after the first stock withdrawal. This should result in improved mechanical qualities towards the core. ANSYS Workbench was used to perform a Finite Element Analysis on the single cylinder EN8 crankshaft. Many conversations have been held based on the results of finite element analysis. Because the EN8 crankshaft can handle the static stress and has a higher tensile strength, there is no problem from a strength standpoint. The cost of an EN8 crankshaft can also be reduced by mass manufacture. This endeavor will leave an indelible impression on the automotive industry.

No. of Pages : 5 No. of Claims : 4

(54) Title of the invention : DESIGN AND ANALYSIS OF WALK IN COOLER

<p>(51) International classification :G06Q0050060000, B60N0002120000, C09K0005040000, F25B0009000000, G01R0031367000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Hindusthan College of Engineering and Technology Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Dr.K.Siva Address of Applicant :Professor& Head /Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>2)Dr. M.Mohanraj Address of Applicant :Professor /Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>3)Mr. J.Dinesh Kumar Address of Applicant :Assistant Professor/Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>4)Mr.L.Karthick Address of Applicant :Assistant Professor/Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>5)Mr. D. Amalraju Address of Applicant :Associate Professor/Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>6)Sankaranarayanan.T Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>7)Saran.R Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>8)Sathish Kumar.M Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p> <p>9)Suriya.G Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032 -----</p>
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(57) Abstract :

In this project we optimizing the system and perform. The energy performance of a walk-in cooler working with R22 and its substitute with another refrigerant R431A. . The experimental investigation was carried out considering three different operating conditions; in particular, the AHRI (Air conditioning, Heating, and Refrigeration Institute) standard has been used as reference for operating conditions. The experimental analysis allowed the determination of cooling capacity, the electrical power- absorbed, the coefficient of performance of the walk-in cooler. It helps us to study about whether the refrigerant in ecofriendly and it does not affect the environment.

No. of Pages : 5 No. of Claims : 4

(54) Title of the invention : DESIGN AND ANALYSIS OF SOLAR DESALINATION SYSTEM

(51) International classification :C02F0001140000, C02F0103080000, F24S0010100000, B01D0001000000, C02F0001020000

(86) International Application No :NA
 Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
 Filing Date :NA

(62) Divisional to Application Number :NA
 Filing Date :NA

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(57) Abstract :
 Solar stills are employed in remote or isolated settings where there is lots of sunlight. Due to the poor output rates of solar stills, their use has been limited. Using contemporary research technology, however, the solar production rate can still be enhanced. The main idea is connected to Solar Distillation, which is the use of solar energy to desalinate salty water for the benefit of humanity. A Single Sloped Solar Still has rectangular basins and is appropriately insulated on the sides and bottom. The basins are coated with an absorbent substance. The selected coating help the heating and humidification ratio and produce to better yield. The slope of the glass cover is determined by the position of where the still will be utilised. The desalinated water is collected in a collecting basin, and the desalinated water product preserves its original flavour and may be utilised for drinking and other purposes.

No. of Pages : 5 No. of Claims : 4

(54) Title of the invention : DESIGN AND ANALYSIS OF SOLAR WATER HEATER

(51) International classification :F24S0010750000, F24S0010700000, F24S0010500000, F24S0020200000, F24S0010250000

(86) International Application No :NA
Filing Date :NA

(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
Filing Date :NA

(62) Divisional to Application Number :NA
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(57) Abstract :

Solar energy is transformed into thermal power when sunlight travels through the glass and reaches the absorber plate, which warms up. The heat is delivered to liquid via pipes connecting to the absorber plate. The regular black paint is coated over the absorber plate. Because metal is a powerful heat conductor, absorber plates are usually constructed of metal, most often copper or aluminium. Copper is more costly than aluminium, but it conducts electricity better and is less prone to corrosion. In this work, flat plate absorber body is used and a transparent glass is placed over the absorber plate body, which lowers heat losses. Usually water is used inside the tube to absorb heat from the flat plate collector where the heat is reflected from the absorber body. An absorber plate is usually steel, aluminium or copper with matte black coating. Fluid from the overhead tank is frequently pumped through tubing where heat transfer takes and obtained the hot water up to 18°C to 20 °C. The hot water can be obtained passively and used for many applications like household, industries and hospitals.

No. of Pages : 5 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202241028533 A

(19) INDIA

(22) Date of filing of Application :18/05/2022

(43) Publication Date : 27/05/2022

(54) Title of the invention : DESIGN AND FABRICATION OF LOW COST MOULD BY ARAMID FIBRE REINFORCED POLYMER(AFRP) USING 3D PRINTER

<p>(51) International classification :E04F0011180000, C08L0029040000, B29C0033380000, C08L0101000000, H01M0004880000</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant : 1)Hindusthan College of Engineering and Technology Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032. ----- Name of Applicant : NA Address of Applicant : NA</p> <p>(72)Name of Inventor : 1)Dr.K.Siva Address of Applicant :Professor & Head/Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032. ----- --- 2)DR.C.Nithyanandam Address of Applicant :Associate Professor/Mech, Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032. ----- --- 3)M.Gokula Krishnan Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032. ----- 4)S.Jayaprakash Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032. ----- 5)P.Alagu Venkatesh Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032. ----- 6)K.Harish Address of Applicant :Hindusthan College of Engineering and Technology, Valley Campus, Pollachi Highway, Coimbatore, Tamilnadu, India 641032. -----</p>
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(57) Abstract :

Annexure 3 The filament of fiber-reinforced polymer is filled in a 3D printer. The cad model of stairway baluster is converted into the coding of 3Dprinter input by Ultimaker- Cura software. These codes are entered into 3D Printer. The 3D printer has produced a low-cost stairway bluster mold. This low-cost mold is durable, with less manufacturing time and cost. The fiber-reinforced is cheapest as compared to wooden material. The weight of FRP mold is much lower than wooden materials.

No. of Pages : 5 No. of Claims : 4

Application Details

APPLICATION NUMBER	202041007777
APPLICATION TYPE	ORDINARY APPLICATION
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FIELD OF INVENTION	COMPUTER SCIENCE
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PRIORITY DATE	NA
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	06/03/2020

Application Status

APPLICATION STATUS

Application Published

[View Documents](#)

(54) Title of the invention : SMART COST SANITIZER SPRAY MACHINE

<p>(51) International classification :B05D 1/02</p> <p>(31) Priority Document No :NA</p> <p>(32) Priority Date :NA</p> <p>(33) Name of priority country :NA</p> <p>(86) International Application No :NA Filing Date :NA</p> <p>(87) International Publication No : NA</p> <p>(61) Patent of Addition to Application Number :NA Filing Date :NA</p> <p>(62) Divisional to Application Number :NA Filing Date :NA</p>	<p>(71)Name of Applicant :</p> <p>1)Dr.C.Nithyanandam Address of Applicant :Department of Mechanical Engineering Hindusthan College of Engineering and Technology Othakkalamandapam, Pollachi Road, Coimbatore - 641032, Tamil Nadu. Tamil Nadu India</p> <p>2)Mr.K.Sriharrish</p> <p>3)Dr.S.K. Rajesh Kanna</p> <p>4)Dr. V. Nagaraju</p> <p>5)Dr.K.Sangeetha</p> <p>6)Dr. B. Vinodhini</p> <p>7)Dr. S. Prakash</p> <p>8)Mr.A.Richard William</p> <p>9)Dr.I.Jerin Leno</p> <p>10)Mr.M.D.Rajkamal</p> <p>11)Dr.S.Umamaheswari</p> <p>(72)Name of Inventor :</p> <p>1)Dr.C.Nithyanandam</p> <p>2)Mr.K.Sriharrish</p> <p>3)Dr.S.K. Rajesh Kanna</p> <p>4)Dr. V. Nagaraju</p> <p>5)Dr.K.Sangeetha</p> <p>6)Dr. B. Vinodhini</p> <p>7)Dr. S. Prakash</p> <p>8)Mr.A.Richard William</p> <p>9)Dr.I.Jerin Leno</p> <p>10)Mr.M.D.Rajkamal</p> <p>11)Dr.S.Umamaheswari</p>
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(57) Abstract :

Common places knowing as public places including streets, markets, shopping precincts, community centres, parks, playgrounds, and neighbourhood spaces in residential areas take part in an essential task in the social life of communities. Corona virus Disease 2019 (COVID -19) is a respiratory syndrome caused by a novel Corona virus (SARS-CoV-2). This type of virus put on the air in most occurrences through respiratory droplets, direct contact with cases and also through contaminated surfaces/objects. Although the virus stays alive on environmental surfaces for different period of time, it gets easily inactivated by chemical disinfectants. Ever since COVID-19 outbreak was declared as global pandemic, Indian Cities have been building noteworthy hard works in sanitizing the cities, especially the public spaces. In order to take sanitisation and disinfection drive in a faster and more effective way, the Indian government has introduced many high cost sanitizing machinery around the country. This innovation brings a machine with smart cost, good sanitizing and less weight. This innovation also designed portable and effective during the situation like COVID-19 pandemic.

No. of Pages : 8 No. of Claims : 5



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Your Indian Design Patent Application has been Successfully Filed

1 message

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21 December 2021 at 01:21

Title of Design Patent: " **Solar Based Smart Air Car Purifier** "

Your **Design Patent Application** Filed successfully today. It will be approved and **GRANTED/REGISTERED** by the Indian Patent Office **within 6-month to 8-months**.

Once it is **Accepted, Granted/Registered** online, We will send all forms, certificates and documents related to your filing along with all proofs for your future reference. Below are the details of the application:

Application Number-**355142-001**, Application Ref Number-**355142-001**, Filing Date-**19/12/2021**

Note: 1. Under Extraordinary Circumstances, the Patent Application processing from the Patent Office side may be delayed 1 or 2 months as it is granted patent. In such a case, Requesting You please be patient and we will follow-up and inform you the same in timely manner if delaying.

Filing Report Proof is also attached. Please go through the attachment.

 **Design Application Status-Air-Car.pdf**
86K

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202041025219 A

(19) INDIA

(22) Date of filing of Application :16/06/2020

(43) Publication Date : 19/06/2020

(54) Title of the invention : FULLYDAY AUTOMATIC TOUCHLESS MIST SPRAYS SANITIZER DISPENSER

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(32) Priority Date	:NA	
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(86) International Application No	:NA	
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(87) International Publication No	: NA	
(61) Patent of Addition to Application Number	:NA	
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(62) Divisional to Application Number	:NA	
Filing Date	:NA	

(57) Abstract :

The main aim of the present invention is to provide low cost fullyday automatic touchless mist spray sanitizer dispenser machine to fight against novel pandemic viruses. This invention consists of two sensors namely LDR and proximity which connected in series to work around the clock. This automatic machine designed in such a way that which can fix in indoor as well as outdoor. This invention is build and enclosed with non corrosive metals to provide safety and also to ensure long life. High pressure pump along with the adjustable nozzle is used to convert liquid sanitizer into mist spray. The liquid sanitizer level indicator also included with this invention to ensure safety operations.

No. of Pages : 8 No. of Claims : 5

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Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35375	ORDINARY APPLICATION	202241050545	GFRP COMPOSITE LEAF SPRING EXPERIMENTAL AND FINITE ELEMENT ANALYSIS	1750
2		E-2/3849/2022-CHE	202241050545	Form2	0
3		E-3/27463/2022-CHE	202241050545	Form3	0
4	35375	E-12/6612/2022-CHE	202241050545	Form9	2750
5		E-106/5207/2022-CHE	202241050545	Form28	0
6		E-101/15762/2022-CHE	202241050545	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
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CHALLAN : TR-5
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Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35377	ORDINARY APPLICATION	202241050546	DESIGN AND ANALYSIS OF CYCLONE SEPARATOR	1750
2		E-2/3850/2022-CHE	202241050546	Form2	0
3		E-3/27465/2022-CHE	202241050546	Form3	0
4	35377	E-12/6613/2022-CHE	202241050546	Form9	2750
5		E-106/5208/2022-CHE	202241050546	Form28	0
6		E-101/15763/2022-CHE	202241050546	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294669	15/06/2022	4500

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Date/Time : 05/09/2022

CHALLAN : TR-5
DOCKET NO:82311

Agent Number:

To,
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VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032 principal@hict.ac.in

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35366	ORDINARY APPLICATION	202241050539	DESIGN OF AIR PRE HEATER FOR IMPROVED EFFICIENCY OF SI ENGINE	1750
2		E-2/3842/2022-CHE	202241050539	Form2	0
3		E-3/27454/2022-CHE	202241050539	Form3	0
4	35366	E-12/6606/2022-CHE	202241050539	Form9	2750
5		E-106/5201/2022-CHE	202241050539	Form28	0
6		E-101/15756/2022-CHE	202241050539	Others(EDUCATIONAL INSTITUTIONAL ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294664	15/06/2022	4500

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Date/Time : 05/09/2022

CHALLAN : TR-5
DOCKET NO:82319

Agent Number:

To,
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VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032 principal@hicet.ac.in

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35374	ORDINARY APPLICATION	202241050544	DESIGN OF ROBOTIC MANIPULATOR IN CASTING INDUSTRY TO HANDLE SHELL	1750
2		E-2/3848/2022-CHE	202241050544	Form2	0
3		E-3/27462/2022-CHE	202241050544	Form3	0
4	35374	E-12/6611/2022-CHE	202241050544	Form9	2750
5		E-106/5206/2022-CHE	202241050544	Form28	0
6		E-101/15761/2022-CHE	202241050544	Others(EDUCATIONAL INSTITUTIONAL ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294666	15/06/2022	4500

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CHALLAN : TR-5
DOCKET NO:82322

Date/Time : 05/09/2022

To,
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VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032. principal@hicet.ac.in

Agent Number:

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35373	ORDINARY APPLICATION	202241050543	DESIGN OF ROBOTIC MANIPULATOR IN CASTING INDUSTRY TO HANDLE SHELL	1750
2		E-2/3847/2022-CHE	202241050543	Form2	0
3		E-3/27461/2022-CHE	202241050543	Form3	0
4	35373	E-12/6610/2022-CHE	202241050543	Form9	2750
5		E-106/5205/2022-CHE	202241050543	Form28	0
6		E-101/15760/2022-CHE	202241050543	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294665	15/06/2022	4500

Note: This is electronically generated receipt hence no signature required.

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Date/Time : 05/09/2022

CHALLAN : TR-5
DOCKET NO:82308

Agent Number:

To,
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VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032. principal@hicet.ac.in

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35365	ORDINARY APPLICATION	202241050538	DESIGN AND STRUCTURAL ANALYSIS OF A ROBOTIC ARM	1750
2		E-2/3841/2022-CHE	202241050538	Form2	0
3		E-3/27451/2022-CHE	202241050538	Form3	0
4	35365	E-12/6605/2022-CHE	202241050538	Form9	2750
5		E-106/5200/2022-CHE	202241050538	Form28	0
6		E-101/15755/2022-CHE	202241050538	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294668	15/06/2022	4500

Note: This is electronically generated receipt hence no signature required.

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Date/Time : 05/09/2022

Agent Number:

CHALLAN : TR-5
DOCKET NO:82315

To,
HINDUSTHAN COLLEGE OF ENGINEERING AND TECHNOLOGY
VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032 principal@hiket.ac.in

Sr. No.	CBR No.	Reference Number /Application Type	Application Number	Title/Remarks	Amount Paid
1	35371	ORDINARY APPLICATION	202241050541	VIBRATION CONTROL IN BORING PROCESS USING A CONSTRAINED VISCOELASTIC LAYER DAMPER	1750
2		E-2/3845/2022-CHE	202241050541	Form2	0
3		E-3/27457/2022-CHE	202241050541	Form3	0
4	35371	E-12/6608/2022-CHE	202241050541	Form9	2750
5		E-106/5203/2022-CHE	202241050541	Form28	0
6		E-101/15758/2022-CHE	202241050541	Others(EDUCATIONAL INSTITUTIONAL ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294667	15/06/2022	4500

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Date/Time : 05/09/2022

CHALLAN : TR-5
DOCKET NO:82312

Agent Number:

To,
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VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032 principal@hiket.ac.in

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35367	ORDINARY APPLICATION	202241050540	WASTE ENERGY HARVESTING BY THERMO ELECTRICS	1750
2		E-2/3843/2022-CHE	202241050540	Form2	0
3		E-3/27455/2022-CHE	202241050540	Form3	0
4	35367	E-12/6607/2022-CHE	202241050540	Form9	2750
5		E-106/5202/2022-CHE	202241050540	Form28	0
6		E-101/15757/2022-CHE	202241050540	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294661	15/06/2022	4500

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CHALLAN : TR-5
DOCKET NO:82318

Date/Time : 05/09/2022

To,
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VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032 principal@hiket.ac.in

Agent Number:

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35372	ORDINARY APPLICATION	202241050542	DESIGN AND ANALYSIS OF CARBON/GLASS EPOXY LEAF SPRING	1750
2		E-2/3846/2022-CHE	202241050542	Form2	0
3		E-3/27458/2022-CHE	202241050542	Form3	0
4	35372	E-12/6609/2022-CHE	202241050542	Form9	2750
5		E-106/5204/2022-CHE	202241050542	Form28	0
6		E-101/15759/2022-CHE	202241050542	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294663	15/06/2022	4500

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Date/Time : 05/09/2022

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To,
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Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35377	ORDINARY APPLICATION	202241050546	DESIGN AND ANALYSIS OF CYCLONE SEPARATOR	1750
2		E-2/3850/2022-CHE	202241050546	Form2	0
3		E-3/27465/2022-CHE	202241050546	Form3	0
4	35377	E-12/6613/2022-CHE	202241050546	Form9	2750
5		E-106/5208/2022-CHE	202241050546	Form28	0
6		E-101/15763/2022-CHE	202241050546	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294669	15/06/2022	4500

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Date/Time : 05/09/2022

Agent Number:

CHALLAN : TR-5
DOCKET NO:82328
To,
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VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032. principal@hicet.ac.in

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35375	ORDINARY APPLICATION	202241050545	GFRP COMPOSITE LEAF SPRING EXPERIMENTAL AND FINITE ELEMENT ANALYSIS	1750
2		E-2/3849/2022-CHE	202241050545	Form2	0
3		E-3/27463/2022-CHE	202241050545	Form3	0
4	35375	E-12/6612/2022-CHE	202241050545	Form9	2750
5		E-106/5207/2022-CHE	202241050545	Form28	0
6		E-101/15762/2022-CHE	202241050545	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294662	15/06/2022	4500

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CHALLAN : TR-5
DOCKET NO:82322

Date/Time : 05/09/2022

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Agent Number:

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35373	ORDINARY APPLICATION	202241050543	DESIGN OF ROBOTIC MANIPULATOR IN CASTING INDUSTRY TO HANDLE SHELL	1750
2		E-2/3847/2022-CHE	202241050543	Form2	0
3		E-3/27461/2022-CHE	202241050543	Form3	0
4	35373	E-12/6610/2022-CHE	202241050543	Form9	2750
5		E-106/5205/2022-CHE	202241050543	Form28	0
6		E-101/15760/2022-CHE	202241050543	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294665	15/06/2022	4500

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Date/Time : 05/09/2022

Agent Number:

CHALLAN : TR-5
DOCKET NO:82315

To,
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Sr. No.	CBR No.	Reference Number /Application Type	Application Number	Title/Remarks	Amount Paid
1	35371	ORDINARY APPLICATION	202241050541	VIBRATION CONTROL IN BORING PROCESS USING A CONSTRAINED VISCOELASTIC LAYER DAMPER	1750
2		E-2/3845/2022-CHE	202241050541	Form2	0
3		E-3/27457/2022-CHE	202241050541	Form3	0
4	35371	E-12/6608/2022-CHE	202241050541	Form9	2750
5		E-106/5203/2022-CHE	202241050541	Form28	0
6		E-101/15758/2022-CHE	202241050541	Others(EDUCATIONAL INSTITUTIONAL ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294667	15/06/2022	4500

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Date/Time : 05/09/2022

Agent Number:

CHALLAN : TR-5
DOCKET NO:82312
To,
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Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35367	ORDINARY APPLICATION	202241050540	WASTE ENERGY HARVESTING BY THERMO ELECTRICS	1750
2		E-2/3843/2022-CHE	202241050540	Form2	0
3		E-3/27455/2022-CHE	202241050540	Form3	0
4	35367	E-12/6607/2022-CHE	202241050540	Form9	2750
5		E-106/5202/2022-CHE	202241050540	Form28	0
6		E-101/15757/2022-CHE	202241050540	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294661	15/06/2022	4500

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CHALLAN : TR-5
DOCKET NO:82311

Date/Time : 05/09/2022

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VALLEY CAMPUS, POLLACHI HIGHWAY, COIMBATORE-641032 principal@hiket.ac.in

Agent Number:

Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35366	ORDINARY APPLICATION	202241050539	DESIGN OF AIR PRE HEATER FOR IMPROVED EFFICIENCY OF SI ENGINE	1750
2		E-2/3842/2022-CHE	202241050539	Form2	0
3		E-3/27454/2022-CHE	202241050539	Form3	0
4	35366	E-12/6606/2022-CHE	202241050539	Form9	2750
5		E-106/5201/2022-CHE	202241050539	Form28	0
6		E-101/15756/2022-CHE	202241050539	Others(EDUCATIONAL INSTITUTIONAL ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294664	15/06/2022	4500

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Date/Time : 05/09/2022

CHALLAN : TR-5
DOCKET NO:82308

Agent Number:

To,
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Sr. No.	CBR No.	Reference Number / Application Type	Application Number	Title/Remarks	Amount Paid
1	35365	ORDINARY APPLICATION	202241050538	DESIGN AND STRUCTURAL ANALYSIS OF A ROBOTIC ARM	1750
2		E-2/3841/2022-CHE	202241050538	Form2	0
3		E-3/27451/2022-CHE	202241050538	Form3	0
4	35365	E-12/6605/2022-CHE	202241050538	Form9	2750
5		E-106/5200/2022-CHE	202241050538	Form28	0
6		E-101/15755/2022-CHE	202241050538	Others(EDUCATIONAL INSTITUTION ELIGIBILITY DOCUMENT)	0
Total :					4500

Received a sum of Rs. 4500 (Rupees Four Thousand Five Hundred only) through

Payment Mode	Bank Name	Cheque/Draft Number	Cheque/Draft Date	Amount in Rs
Draft	Bank of Baroda	294668	15/06/2022	4500

Note: This is electronically generated receipt hence no signature required.

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OF
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निर्गमन सं. 33/2022
ISSUE NO. 33/2022

शुक्रवार
FRIDAY

दिनांक: 19/08/2022
DATE: 19/08/2022

पेटेंट कार्यालय का एक प्रकाशन
PUBLICATION OF THE PATENT OFFICE

(54) Title of the invention : Respiratory Medicine Medical Spraying System

(51) International classification :A61M0031000000, A61M0011000000, A01M0011000000,
A61M0005303000, A47B0067020000
(86) International Application No :PCT//
Filing Date :01/01/1900
(87) International Publication No : NA
(61) Patent of Addition to
Application Number :NA
Filing Date :NA
(62) Divisional to Application
Number :NA
Filing Date :NA

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Name of Applicant : NA

Address of Applicant : NA

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(57) Abstract :

[08] The utility model describes a medical sprayer used in the field of respiratory medicine, comprising a drug delivery tube, a movable inner sleeve, at one end of which the drug delivery tube is connected to a telescopic tube; One end of the spray head is connected to the drug storage tank; the bottom of the medicine storage container is connected to the air blast device; the medicine storage container is connected to the double gauge medicine bottle connecting tube; the outer ring of the drug delivery tube near one end of the spray head rotates and connects to the first ring; A nut is placed on the outer ring of one end of the drug delivery tube next to the drug storage container; the medicine supply tube is provided with an external thread corresponding to the nut; the side of the nut next to the first ring is rotatably connected to the second ring; Two support plates are located between two rings; one end of each base plate is pivotally attached to the first ring via the support rod and the other end is pivotally fixed to the second ring via the other support rod; The distance can be adjusted according to the patient's mouth opening; The drug delivery tube can be rotated directly in the mouth to reposition the injection if necessary. The utility model refers to the technical field of respiratory medicine, in particular a type of medical sprayer for respiratory medicine. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3]

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(54) Title of the invention : Online predictive maintenance of electric motors using Internet of Things

(51) International classification :H04W0084180000, G05B0023020000, G06Q0010000000, G08B0021180000, G06N0007000000

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(57) Abstract :
 [014] This work aims to present a proposal for a system for monitoring electrical equipment in a production line, aiming at carrying out predictive maintenance through early detection of failures. The system measures the electric current consumed by such equipment, using a wireless sensor network, supervised by a concentrator node, which in turn processes the data through current signature analysis techniques. When a deviation in current consumption behavior is detected, correlated to some type of potential failure, the system generates alarms and additional information to the maintenance supervisor, who, in a planned way, proceeds with the maintenance of the equipment without prejudice to production. This predictive maintenance approach is part of the Internet of Things (IoT) context. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5]

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(54) Title of the invention : ITERATIVE TECHNIQUE TO SOLVE FRACTIONAL DIFFERENTIAL EQUATIONS APPLIED IN INDUSTRY

(51) International classification :G06F0017130000, G06F0030367000, G06Q0040060000, A61L0031140000, G06F0111100000

(86) International Application No :PCT// Filing Date :01/01/1900

(87) International Publication No : NA

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(57) Abstract :
 ITERATIVE TECHNIQUE TO SOLVE FRACTIONAL DIFFERENTIAL EQUATIONS APPLIED IN INDUSTRY A method to solve fractional differential equations applied in an industry. The method includes solving, using the theory of FDEs, the governing equation in closed form and numerical solutions are also determined using a simple but efficient central difference scheme. Enabling the shown how knowledge of the exact and numerical solutions design of the device to be optimized. Offering a fractional diffusion models multiple possibilities for generalizing Flick's law in a consistent manner in order to account for history dependence and nonlocal effects. Proving particularly well-suited for dealing with the numerical difficulties inherent to fractional differential operators. Developing a numerical framework based on the least-squares spectral element method for studying and comparing anomalous diffusion models in pellets. FIG.1

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(54) Title of the invention : Innovative Method for monitoring of rigid pavement in bike path

(51) International classification :G07C0005080000, G06T0007000000, G07C0005000000, H04L0029060000, G01H0001000000

(86) International Application No :PCT//
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(57) Abstract :

[015] Currently, the condition of the pavement is assessed through visual inspection, which is an outdated and subjective approach that does not effectively address maintenance issues. Since the condition of bike surfaces can manifest itself in the form of bicycle vibrations, the Bike path Monitoring System (BPMS) is proposed, the task of which is to objectively assess the condition of the surface of the bike surface by measuring these vibrations with sophisticated sensors built into modern smartphones. By collecting this vibration data, combined with location data from cyclists' smartphones, BIMS will be able to continuously track asset health data in relation to bike pavement surfaces. Valuable information from BIMS will help highway managers make better use of their limited resources in regards to operating and maintaining, repairing and auditing the cycling environment. This study provides a solid foundation for BPMS by describing all the processes involved and what they entail. This study also focused on the feasibility of the BIMS evaluation component, first conducting a case study that examined whether the current quality of the sensor is sufficient to provide reliable data for BIMS. Based on five tests, this case study found that smartphone motion sensors are capable of measuring accelerations with high accuracy, and location sensors provide GPS data with an acceptable level of accuracy. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5]

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(54) Title of the invention : Evaluation of the influence of RCA in increasing the mechanical strength of cementing composites

(51) International classification :C04B0028040000, G01N0033380000, C04B0111000000, G01N0011000000, C04B0028020000

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(61) Patent of Addition to Application Number :NA
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(57) Abstract :
 [07] The aim of this study was to investigate the influence of RCA on the rheological and mechanical properties of self-compacting concrete (SCC). For this, four different compositions of SCC were analyzed, one of them produced only with natural aggregates. The other mixtures used recycled fine and/or coarse aggregates to replace natural aggregates, at a content of 20% by mass. The rheological characterization of the cement paste and mortars for the production of SCC was also carried out, by means of rotational rheometry. The rheological characterization of pastes, mortars and concretes is a way of evaluating the behavior of these composites in the fresh state, providing useful information that will help in the dosing process and quality control. The properties of fresh concrete were evaluated through the tests of spreading, flow time t500 and in the V hopper, passing ability and resistance to segregation. In the hardened state, the compressive and tensile strengths by diametral compression and static modulus of elasticity were determined. Through the results obtained, it was possible to verify loss of fluidity in mortars and concretes that used RCA. On the other hand, there was no significant reduction in the mechanical properties of concrete produced with 20% recycled coarse or fine aggregates. Accompanied Drawing [FIG. 1] [FIG. 2] [FIG. 3] [FIG. 4] [FIG. 5] [FIG. 6] [FIG. 7][FIG. 8][FIG. 9][FIG. 10][FIG. 11]

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(54) Title of the invention : EFFICIENT EVOLUTION OF CRACK SIZE ESTIMATE WITH FAST BOUND CRACK

(51) International classification :H03G0003000000, G06F0017100000, G06F0007020000, G06F0030200000, G06F0017130000

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(57) Abstract :

This paper presents the application of the Fast Bounds Crack methodology to generate upper and lower bound functions for crack size evolution models. The performance of this methodology was evaluated through the relative deviation and computation time relative to the approximate numerical solutions obtained by the open 4th order Runge-Kutta method (RK4). A maximum relative deviation of 5.92% was reached and the calculation time for the analyzed samples was 130000 times greater than the time obtained by the RK4 method. Based on the arithmetic mean of the upper and lower dimensions obtained in the methodology applied in this study, an engineering application has also been made to obtain an approximate numerical solution in cases where the law of evolution is unknown. The maximum relative error found in this application is 2.08%, which proves the effectiveness of the Quick Boundaries Crack methodology.

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PUBLICATION OF THE PATENT OFFICE

(54) Title of the invention : EFFICIENT EVOLUTION OF CRACK SIZE ESTIMATE WITH FAST BOUND CRACK

(51) International classification :H03G0003000000, G06F0017100000, G06F0007020000, G06F0030200000, G06F0017130000

(86) International Application No :NA
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(57) Abstract :

This paper presents the application of the Fast Bounds Crack methodology to generate upper and lower bound functions for crack size evolution models. The performance of this methodology was evaluated through the relative deviation and computation time relative to the approximate numerical solutions obtained by the open 4th order Runge-Kutta method (RK4). A maximum relative deviation of 5.92% was reached and the calculation time for the analyzed samples was 130000 times greater than the time obtained by the RK4 method. Based on the arithmetic mean of the upper and lower dimensions obtained in the methodology applied in this study, an engineering application has also been made to obtain an approximate numerical solution in cases where the law of evolution is unknown. The maximum relative error found in this application is 2.08%, which proves the effectiveness of the Quick Boundaries Crack methodology.

No. of Pages : 23 No. of Claims : 4

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(54) Title of the invention : Automatic brake system for controlling a vehicle using AI and ML model

(51) International classification :B60T0007120000, B60T0017180000, G07F0017240000, B60T0008175500, G06N0003020000

(86) International Application No Filing Date :PCT// :01/01/1900

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(61) Patent of Addition to Application Number Filing Date :NA :NA

(62) Divisional to Application Number Filing Date :NA :NA

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(57) Abstract :
 ABSTRACT AUTOMATIC BRAKE SYSTEM FOR CONTROLLING A VEHICLE USING AI AND ML MODEL A method for automatic brake system for controlling a vehicle using Artificial intelligence and Machine Learning model. The method includes brake actuation system for actuating the 5 automatic brakes to supply the braking effort to the wheels, brake control system for controlling the brake actuation means to supply an automatic component of the service braking effort. The brake control system is arranged, when standstill of the vehicle is detected and before the parking brake is engaged, to cause the brake actuation to supply the automatic component of the service braking effort only to the subset of the plurality of 10 wheels. Collecting the real time inputs are with the help of ultrasonic sensor and yaw rate sensor. The ultrasonic sensor is attached to the front of the vehicle and it detects the occurrence of obstacle in front of the vehicle thereby sending and receiving ultrasonic waves from the sensor. Processing the input values with the help of Artificial Neural Network multilayered algorithm which inturn takes decision based on the weightage values given by 15 the user and applying a distributed brake force to each wheel of the vehicle based upon the decision values from the decision layer. FIG.1

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(54) Title of the invention : Automatic brake system for controlling a vehicle using AI and ML model

(51) International classification :B60T0007120000, B60T0017180000, G07F0017240000, B60T0008175500, G06N0003020000

(86) International Application No Filing Date :PCT// :01/01/1900

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(57) Abstract :
 ABSTRACT AUTOMATIC BRAKE SYSTEM FOR CONTROLLING A VEHICLE USING AI AND ML MODEL A method for automatic brake system for controlling a vehicle using Artificial intelligence and Machine Learning model. The method includes brake actuation system for actuating the 5 automatic brakes to supply the braking effort to the wheels, brake control system for controlling the brake actuation means to supply an automatic component of the service braking effort. The brake control system is arranged, when standstill of the vehicle is detected and before the parking brake is engaged, to cause the brake actuation to supply the automatic component of the service braking effort only to the subset of the plurality of 10 wheels. Collecting the real time inputs are with the help of ultrasonic sensor and yaw rate sensor. The ultrasonic sensor is attached to the front of the vehicle and it detects the occurrence of obstacle in front of the vehicle thereby sending and receiving ultrasonic waves from the sensor. Processing the input values with the help of Artificial Neural Network multilayered algorithm which inturn takes decision based on the weightage values given by 15 the user and applying a distributed brake force to each wheel of the vehicle based upon the decision values from the decision layer. FIG.1

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(21) Application No.202241031105 A

(19) INDIA

(22) Date of filing of Application :31/05/2022

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(54) Title of the invention : DESIGN AND FABRICATION OF LIFTING ARRANGEMENTS IN TRAINS

(51) International classification :B66B0009020000, F16B0033020000, G09B0019000000, B61K0005060000, G99Z0099000000

(86) International Application No :NA
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(87) International Publication No : NA

(61) Patent of Addition to Application Number :NA
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(62) Divisional to Application Number :NA
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(57) Abstract :

When one talks of trains in India, the image that strikes the mind is that of a locomotive hauling the coaches Concept of Multi-Unit Distributed traction i.e. train-set is not heard in Indian Railways for Main line train operations. It has been decided to Manufacture World Class Train-sets in India. The train travellers are exposed to many physical health problems during travelling on climbing to the their berth (eg; pain in joints, backbone, etc.,). Many physically challenged, elderd, women and others facing many problems during train' travelling. The focus of present work was at designing a elevator come table for the enhancement of independence and quality travel of disabled and elderly persons. Further work presents an overall product design and development phases of elevator. In this system we are going to use a lead screw mechanism for lifting the seat, lead screw turns rotator motion into linear motion combining a screw and a nut where the screw thread is indirect contact with the nut thread. Incase of roller screws, the rollers rather than nut are in direct contact with the screw thread offering great efficiency. The major contributions of paper work can be summarized as modelling and fabrication of a proposed Elevator and testing it in a real time constraints with load application.

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(21) Application No.202241031616 A

(19) INDIA

(22) Date of filing of Application :02/06/2022

(43) Publication Date : 10/06/2022

(54) Title of the invention : FABRICATION OF CAR LIFTING MECHANISM USING UNIVERSAL OBJECT INTERACTION

(51) International classification :B60S0009060000, B66F0003160000, B66F0003180000, B66F0019000000, B66C0023780000

(86) International Application No :NA
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(57) Abstract :

The approach to this idea involves here we are introducing the motorized screw jack. The vehicle should be lifted for certain type of works. This cannot be done manually. To avoid such problem a jack was invented. To make the work easier than a screw jack we have introduced a new concept called motorized screw jack. We can easily lift the vehicle up and down by using the mobile application. The entire assembly is controlled by app which is made on IOT app maker and the brain of this project is the NODU MCU. which controls all the motors by receiving signals from the app with help of a WIFI module, NODU MCU stores the code which is encoded into it by NODU MCU encoder. Mechanical jacks can be either hand operated or power driven. A jack is commonly used with cars but is also used in many other ways, including industrial machinery and even aeroplanes. They can be short, tall, fat, or thin depending on the amount of pressure they will be under and the space that they need to fit into. The jack is made out of various types of metal, but the screw itself is generally made out of lead. A large amount of heat is generated in the screw jack and long lifts can cause serious overheating. Ensure that you follow the speed, load capacity, temperature recommendation and other relevant factors for application.

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(51) International classification :G06F0030230000, B29C0048050000, C22C0047080000, B60N0002680000, C21D0001340000

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(57) Abstract :
 EN8 has good identical metallurgical constructions in its heat-treated forms, resulting in reliable machining qualities. On sections bigger than 63mm, good heat treatment results are still possible, although it should be noted that mechanical qualities begin to deteriorate around the Centre of the bar. As a result, it is advised that larger quantities of EN8 be provided untreated, with any heat treatment occurring after the first stock withdrawal. This should result in improved mechanical qualities towards the core. ANSYS Workbench was used to perform a Finite Element Analysis on the single cylinder EN8 crankshaft. Many conversations have been held based on the results of finite element analysis. Because the EN8 crankshaft can handle the static stress and has a higher tensile strength, there is no problem from a strength standpoint. The cost of an EN8 crankshaft can also be reduced by mass manufacture. This endeavor will leave an indelible impression on the automotive industry.

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(21) Application No.202241031625 A

(19) INDIA

(22) Date of filing of Application :02/06/2022

(43) Publication Date : 10/06/2022

(54) Title of the invention : THE PROPERTIES OF COCONUT SHELL POWDER, FIBRE, POSTACHIO SHELL POWDER AND GROUND NUT SHELL POWDER

(51) International classification :B29C0070080000, C04B0035800000, B29C0070120000, B32B0037120000, C22C0047200000

(86) International Application No :NA
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(57) Abstract :
 The approach to this idea involves that the composites are the main- material that is being used by the present world. Composites have a more significant ■ advantage because these are made by engineering processes and mainly helpful to-. reduce the weight and hence to increase the efficiency. Composite material consists of two or more materials in a different phase. Composite materials (or composites for short) are engineered materials made from two or more Fibre-reinforced composite materials consist of 'fibres' of high strength and modulus ' embedded in or bonded to a 'matrix' with distinct interface (boundary) between them. In this form, both fibres and matrix retain their physical and chemical identities, yet they produce a combination of properties that cannot be. achieved with either of the constituents. . Existing polymers are mainly blended with different materials with the aim of cost reduction and tailor the product for specific applications. Environmental regulations and ethical concerns have triggered the search for materials that are environmentally friendly. Composite materials (or composites for short) are engineered materials made from two or more Fibre reinforced composite materials- consist of 'fibres' of high strength and modulus embedded in or bonded to a 'matrix' with- distinct interface (boundary) between them. In this form, both fibres and matrix retain their physical and chemical identities, yet they produce a combination .

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