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INDEX Project Completion Report

S.No	Title of the Project	Name of Principal Investigator	Name of Co-investigator	Duration of the project	Page No From To
1	Self -renovation of building crack with biological action	Mr.Belin Jude	-	3 Months	2-5
2	Tree shifting and replantation mechanism	L.S.Narenthira	-	3 Months	6-10
3	Integrated Airport Control and Automation	Dr.S.ShanmugaPriya	Dr.R.Venkatesan	3 Years	11-12
4	Embedded System Interface for Computer	Dr.S.Shanmuga Priya	Mr.P.christopher	3 Years	13-14
5	Green Radio Technology	Dr.R.Venkatesan	Dr.S.Shanmuga Priya	3 Years	15-16
6	Chemical Battery Analyzers for Hydrophones	Mrs.G.NalinaKeerthana	Mrs.A.Barveen	3 Years	17-18
7	Touch Down Aviation Analysis	Dr.V.Chandrasekar	Dr.R.Venkatesan	3 Years	19-20
8	IoT Software Design for AsphalticBitumon Plant	Dr.V.Chandrasekar	Mr.P.Manikandan	3 Years	21-22
9	Dairy Farm ERP	Mr.R.Pradeep	-	1 Year	23-24
10	Online Emission Monitoring	Mrs.G.NalinaKeerthana	Mr.M.K.Mohamed Faizal	3 Years	25-26
11	Regenerative Elevator with IOT	Dr.M.VijayaSarathy	P.Manohar	3 Years	27-28
12	Analysis of Short Transmission Lines	D.Tamilselvan	K.Arunkumaran	3 Years	29-30
13	Automated Load Sharing and Shedding	D.Tamilselvan	E.Muthukumaran	3 Years	31-32
14	Cotton Seed Packing Cover	M. Kirubakaran	P.Pradeep	3 Years	33-34
15	On Board Diagnostic System	M. Kirubakaran	M.Dhandayuthabani	3 Years	35-36
16	Computerised Engine Analysers	Dr.C.Ahilan	M.Visvam	3 Years	37-38
17	Thermal Conductivity Analysis Of Metals	Dr.K.Ramesh	T.Ramkumar	3 Years	39-40


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2

Revised
④

SELF RENOVATION OF BUILDING CRACKS WITH
BIOLOGICAL ACTION
STUDENTS PROJECT PROPOSAL

1. Name of the Student (s) : B.ABDUL AZIEZ, R.M.ANUMANTHA ARASAN GOVAN,
M. MAHABOOB SHAREEF, K. MUHAMMED

Valid e-mail id : write2abdulaziez@gmail.com , anumanthaarasan23@gmail.com

2. Name of the Guide : A. BELIN JUDE

Department / Designation : Civil Engineering / Assistant Professor

Institutional Address : M.I.E.T Engineering college, Gundur, Trichy - 07

Phone No. & Mobile No.: 9944113460

3. Project Title : Self Renovation Of Building Cracks With Biological Action

4. Sector in which your Project proposal is to be Considered : Engineering & Technology

INTRODUCTION:

Self renovation work is the process of work where the additional self healing strength is updated into concrete and masonry structures to renovate it, by adding Biological action. In this healing process micro organisms with it's feed, are physically applied over the damaged (cracked) portion of structure. Where the micro organisms are grown with the help of feed and atmospheric moisture, that organisms converted into lime stone and fill the cracks. Then the cracks are fully covered. For this process we chosen the anaerobic bacteria among harmless and suitable types of bacterias are Proteus, Klebsiella, Staphylococcus, Bacillus.

Reason: Among these bacterias "Bacillus" type of bacterias are more preferable to apply in concrete. Bacillus is a genus of gram-positive Rod shaped bacteria and member of the polyumfirmicutes. This is an aerobic type of bacteria. It can live around 200 years. It can withstand alkalinity of about more than 10 pH.


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Various cultures of "Bacillus" :

1. Bacillus Pasteurizing.
2. Bacillus Sphaericus.
3. Escherichia Coli.
4. Bacillus Subtilis.
5. Bacillus Cohnil.
6. Bacillus Balodurans.
7. Bacillus Pseudofirmus.

Among these types Bacillus Subtilis and Bacillus Sphaericus are suitable for application in concrete, due to the less availability of Bacillus Sphaericus, we are making trials on using Bacillus Subtilis.

OBJECTIVE:

- o To remove the cracks from existing olden structures.
- o To renovate the structure in lesser cost.
- o To increase the life span of structure.
- o Also reduce the duration of renovation.

METHODOLOGY :


Spraying :

In this method feed and bacteria are mixed and diluted together and spray over the cracks using spraying tool.

Coating :

Final bacterial solution is to be painted over the surface of cracks and allow them to fill the cracks.


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Injecting :

It is a method of injecting, the bacterial solution forced into the cracked portion to penetrate into the over all depth of the crack

WORK PLAN :

- i. Concrete cubes and mansonry walls are prepared with cracks.
- ii. Measure the depth of crack with the help of X-Ray scanner.
- iii. Then Wiping the cracks.
- iv. After that bacterial solution is applied over the cracks by using any methodology of above.
- v. Bacteria consume the moisture content from atmosphere and intake it's feed and form the limestone, this stone gets hardened to cover the cracks.

BUDGET:

1) Cement	- Rs. 850.00
2) Sand	-Rs. 450.00
3) Coarse Aggregate	-Rs. 450.00
4) Bacillus Subtilis Bacteria	-Rs. 700.00
5) Lactate (Feed)	-Rs. 200.00
6) Sugar (Feed)	-Rs. 100.00
7) Test tubes	-Rs. 300.00
8) Stir rod	-Rs. 20.00
9) Measuring jar	-Rs. 250.00
10) X-Ray test (To find depth of the crack in concrete cube)	- Rs. 12, 500.00

Total =Rs. 15, 850.00

APPARATUS REQUIREMENTS:


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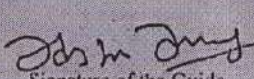
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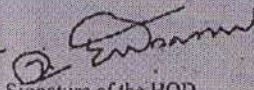

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1. Bacillus subtilis.
2. Feed; Calcium lactate & Sugar.
3. Cement.
4. Fine aggregate
5. Coarse aggregate
6. Cube mould
7. Compression machine (For making cracks on cube)
8. Test tube
9. Stir rod
10. Measuring jar

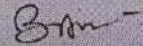
7. Has a similar project been carried out in your college: No

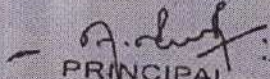
CERTIFICATE This is to certify that Mr.B. ABDUL AZIEZ, Mr. R. M. ANUMANTHA ARASAN GOVAN, Mr.M. MAHABOOB SHAREEF, Mr.K. MUHAMMED are a bonafide final year students of U.G. Engineering courses of our college and it is also certified that two copies of utilization certificate and final report along with seminar paper will be sent to the Council after completion of the project by the end of April 2019.


Signature of the Guide


Signature of the HOD


Signature of the Principal/ Head of the Institution

Submitted by, 
B. ABDUL AZIEZ, K. MUHAMMED,
R. M. ANUMANTHA ARASAN GOVAN,
M. MAHABOOB SHAREEF, of
Final year civil engineering
(2015-2019)


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8


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... can be eliminated by incorporating
... can be motivated by encouraging

Students project Report

1. Name of the Student (s) : I.Selvabarathi
S.Salik Mohamed
T.Susendra Vasan
S.Vigneshraja
- one valid e-mail id : iyyappabharathi1998@gmail.com
2. Name of the Guide : L.S.Narendhira
- Department / Designation : Mechanical / Assistant Professor
- Institutional Address : M.I.E.T Engineering College,
Trichy – 620007.
- Phone No. & Mobile No. : 9443236670
3. Project Title : Tree shifting and replanting mechanism
4. Sector in which the project proposal : Engineering & Technology

Tree shifting and replanting mechanism

Abstract

Shifting the trees and replanting in a new location is best methodology instead of cutting the trees for the road expansion project and building constructions. Instead of growing a new sampling the old tree protection is a best cure for the protection of environment nature. The proposed mechanism will be very much useful for removing the trees and replanting them without any damage by using the proposed mechanism operated by the hydraulic power system in an effective, efficient and economic way.

Introduction

Trees should be properly preserved and no trees should be unnecessarily removed in development of new projects. Trees that are suitable for and worthy of preservation are identified in the planning or feasibility stage and should be properly preserved through careful and proper planning, design, implementation and post construction maintenance. Due consideration should be given to the existing trees that are healthy and structurally sound, in particular the valuable tree. Tree shifting, planting or moving trees was a back-breaking work involving hard hand-digging, root chopping, and heavy lifting.

This proposed mechanism makes planting trees simple and fast, within few minutes and by protecting the plant's root ball. It can be raised the tree effortlessly with the mechanism heavy duty jack, and move the tree right where it want, on easy-rolling tires that move easily over rough ground. They won't bog down in loose soil, and won't damage the tree. It can be easy to manoeuvred the tree easily, and fit it in tight spots.

Construction of the proposed mechanism

The tree plantation mechanism consists of the following systems

1. Hydraulic system
2. Structure/ Frame support
3. Spade arrangements


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Hydraulic system

The hydraulic system is the main operating power system for the tree planting mechanism. It consists of the following components

1. Hydraulic motor/pump
2. Hydraulic oil
3. Reservoir
4. Filter, pipeline and pressure hoses
5. Operating Valves, Cylinders with piston arrangements

Hydraulic oil is stored in the reservoir, which will be pumped through the pipelines to the cylinders. The operating valves give the forward / revers movements to the hydraulic cylinder piston. The pressure is maintained continuously. Schematic diagram of the tree remover is shown in Fig.1

Structure

It is the main framework for the mechanism. It holds the hydraulic system and the spade mechanism. The construction is based on the rigidity and support while digging and as well as replanting the plant, shrubs or tree.

The frame work has to hold the following two arrangements

1. To hold the total mechanism
2. To hold the spade arrangement

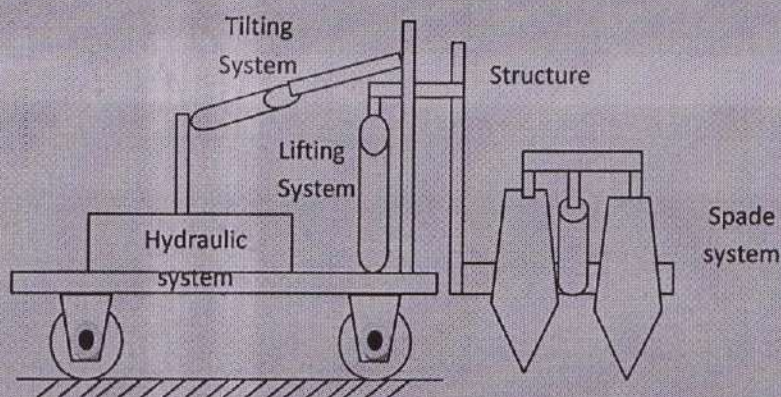


Fig.1. Schematic diagram of the tree remover

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Working principle

The tree replanting working operations has been made on three basic operations.

They are

- Pre- planting operation
- Tree removal operation
- Post planting operation

Pre planting operation

Tree planting mechanism is used to make a pit for the tree root ball. Tree removal working principles explained in detail on the next operation.

Tree removal operation

Step 1: The main structure has to be supported by means of the supporting legs for the rigidness operations.

Step 2: The spade arrangement frame has to be lowered to the ground level before the tree and to be centered.

Step 3: Tree or plant has to be positioned and supported to avoid damage during removal processes.

Step 4: Their spade frames 4 nos are to be neared and locked

Step 5: Individual spade cylinders have to be operated downward one by one.

Step 6: When all the spades are brought to its full bottom most position, spade cylinders valves have to be kept in lock position.

Step 7: Then the main cylinder valve has to be operated upward to lift the spade arrangement which in turn plug the plant from position.

Step 8: After lifting the plant above the ground level, it has to moved to the required placed. Already digging has to be done for planting the tree.

Post tree planting operation

Watering has to be done for the replanted tree.

Proposed design specification

Normal tree trunk diameter	-	25 mm to 50 mm
Root ball depth	-	450 mm
Root ball width	-	600 mm
Root ball weight	-	50 kg
Total machine weight	-	100 kg
Spade frame height	-	1400 mm
Gate opening width	-	300 mm
Spade opening width	-	1000 mm
Number of spade	-	4
Spade material	-	SS304
Drive system	-	10 m ³ /h

Cost estimation

Approximate cost estimation has been given below

- Structure material cost. - Rs. 15000
- Hydraulic system. - Rs. 20000
- Electrical system. - Rs. 5000

Approximate Total cost - **Rs. 40000**

Note

Labor cost for the fabrication has not been included because fabrication proposed to execute in our manufacturing lab itself by utilizing our own facilities with the guidance and help of our experienced lab technicians and our faculties.

Scope of future work

Automatic tree removal and replanting mechanism can be made by providing artificial intelligence sensors and machine vision for the tree and positioned


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identification. Various size of machine can be made by providing flexible structure arrangements.

Advantages

- Environment degradation can be eliminated
- Deforestation can be avoided.
- Nature can be preserved with the road extension projects and building construction.

Limitations

- Size of the trunk and root balls determined the forces required to plug.
- Balancing of the tree remover while transportation is a challenging task.

Conclusion

The tree removal and replanting mechanism has being used by the foreign countries in a robust manner. In India, Gujarat is the only state using this machine. The proposed system is an effective, efficient and economic method. This operation can also implement in our state in a less cost. The constraints can be eliminated by incorporating new innovative ideas by our government and students can be motivated by encouraging them.


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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	Netland Computers			
1.2. Name and title of the Principal Investigator	Dr.S.Shanmuga Priya			
1.2. Name and title of the Co-Investigator	Dr.R.Venkatesan			
1.4. Title	Intergrated Airport control and Automation			
1.5. Project duration	3 Years			
1.6 .Cost of Project (Lacs)	7.00			
1.7 Nature of the work	R.W	<input checked="" type="checkbox"/>	CON	P-Devp

2. Project Achievements

When air traffic control began about fifty years ago, its main promptings were associated with the Second World War and the consequent need to fly at night or in poor visibility (Adair, 1985). Before then, aerial navigation relied on distance and time estimations and on the judicious selection of distinctive features and landmarks along the intended route in order to verify position and progress. Air traffic growth has resulted in serious peak-traffic flight delays in our National Airspace System, and congestion at key airports has been recognized as one of the key factors contributing to the problem. Airport expansion plans designed to increase the airports' capacities cannot fully realize their potential benefits because they tend to increase the complexity of the airport configurations, thus reducing the efficiency of the system. An Ad hoc type of network to be developed to reduce the downtime of the air traffic. Climatology radar and air traffic control are integrated in a single display and it is made to talk to the pilot directly instead of man power.

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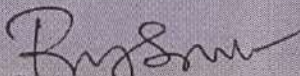
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The advanced control techniques tend to make the control design and their implementation much more complicated with more control loops or channels. The autopilot of modern aircrafts includes a variety of automatic control systems that aid and support the flight navigation, flight management, and perform the enhancing and/or augmenting of the stability characteristics of the airplane. Therefore choosing the dynamic technique will satisfy the performance and robustness specifications.


Principal Investigator


Co-Investigator


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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	Orbit Edutech Pvt. Ltd.,				
1.2. Name and title of the Principal Investigator	Dr.S.Shanmuga Priya				
1.2. Name and title of the Co-Investigator	Mr.P.Christopher				
1.4. Title	Embedded systems Interface for Computer				
1.5. Project duration	3 Years				
1.6 .Cost of Project	5.00				
1.7 Nature of the work	R.W		CON	✓	P-Devp

2. Project Achievements

Embedded systems are managed by microcontrollers or digital signal processors (DSP), application-specific integrated circuits (ASIC), field-programmable gate arrays (FPGA), GPU technology, and gate arrays. These processing systems are integrated with components dedicated to handling electric and/or mechanical interfacing.

Embedded systems programming instructions, referred to as firmware, are stored in read-only memory or flash memory chips, running with limited computer hardware resources. Embedded systems connect with the outside world through peripherals, linking input and output devices.

Embedded system interface to the industry level beyond the curriculum like direct industrial interface using various kinds of GUI will be developed. The proposed work helps the students and unemployed engineers to have higher knowledge related to the embedded system. a typical camera integration works with a GigE or USB interface, which more or less is a plug-and-play solution connected to a PC (or IPC). Together with a manufacturer's software development kit (SDK) it is easy to get access to the camera and this principle can be transferred

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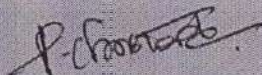
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to an embedded system. For a better integration of cameras with a direct connection to the single point circuit SoC, development and broad adoption of standards is essential. With subsequent generic drivers and standardized data APIs, a true image processor pipeline working out of the box (without adaptive programming) could be achieved. This would make the integration of vision technology even in the smallest and leanest embedded systems


Principal Investigator


Co-Investigator


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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	KG Lakshmiipathi &Co			
1.2. Name and title of the Principal Investigator	Dr.R.Venkatesan			
1.2. Name and title of the Co-Investigator	Dr.S.Shanmuga Priya			
1.4. Title	Green Radio Technology			
1.5. Project duration	3 years			
1.5 .Cost of Project (Lakhs)	6.00			
1.7 Nature of the work	R.W		CON	P- Devp

2. Project Achievements

Energy efficiency in cellular networks has received significant attention from both academia and industry because of the importance of reducing the operational expenditures and maintaining the profitability of cellular networks, in addition to making these networks "greener." Because the base station is the primary energy consumer in the network, efforts have been made to study base station energy consumption and to find ways to improve energy efficiency.

Making the environment clean and green could be the ultimate goal by the nation. The real Challenge of developing Countries is to reduce emission of carbon monoxide delivered to the air because of radio networks. The requirements are ever increasing so, a perfect mechanism is needed to control the energy consumed by the radio networks. A multidisciplinary Training Network of Early Stage Researchers (ESRs) was created in order to conduct top-notch research in energy-related topics. The use of Analog and Digital Network Coding (NC) techniques to improve the energy efficiency of wireless networks without degrading performance has been investigated, specifically targeted to cooperative networks and Device-to-Device communications. The established research programme, developed within a multidisciplinary and

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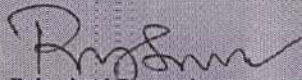
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cross-sectorial environment, covered a wide range of communication technologies, enabling the ESRs to provide significant contributions in their respective research areas. Context-aware cognitive schemes and handover algorithms have been presented and analyzed, showing significant energy efficiency gains compared to traditional approaches.


Principal Investigator


Co-Investigator


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1. Description

1.1. Name of beneficiary of grant sanctioned	Sigma Pi Power Sources				
1.2. Name and title of the Principal Investigator	Mrs.G.Nalina Keerthana				
1.2. Name and title of the Co-Investigator	Mrs.A.Barveen				
1.4. Title	Chemical Battery Analyzers for Hydrophones				
1.5. Project duration	3 Years				
1.6 .Cost of Project	4.75				
1.7 Nature of the work	R.W		CON	<input checked="" type="checkbox"/>	P-Devp

2. Project Achievements

Battery testers analyze the condition and overall health of your primary or secondary cell batteries by assessing the charge, impedance, ripple current, and other parameters of batteries to ensure they are working as required. Common applications include power generation plants, aircraft power supplies, utility, railroad and industrial substations.

Active sonobuoys are used to localize targets quickly and accurately in extreme environmental conditions, against a very quiet submarine, or in an attack mode. The released acoustic energy enables an accurate location from the sonobuoy in both range and bearing to the submarine This is to analyze the time taken for energy conversion of a son buoy battery used in Indian Navy. The high speed data acquiring system is developed for this work. Design strategies, system configuration, and operation of a dual-channel data acquisition system for a radiofrequency (RF) time-domain electron paramagnetic resonance (EPR) spectrometer/imager operating at 300 MHz are described. This system was configured to incorporate high-speed

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analog-to-digital conversion (ADC) and summation capabilities with both internal and external triggering via GPIB interface. The data acquisition system can operate in a two-channel (quadrature) receiver mode for the conventional mixing to baseband. For detection using the single-channel mode, the resonance signals around the center frequency were mixed with a synchronized local oscillator of appropriate frequency leading to an intermediate frequency (IF) is sampled. Comparison of quadrature-mode and an IF-mode operation for EPR detection is presented by studying the FID signal intensity across a bandwidth and as a function of transmit RF power. Imaging of large-sized phantoms accommodated in appropriately sized resonators indicates that IF-mode operation can be used to obtain distortion-free images in resonators.

G. Nalini Keerthana
Principal Investigator

Banuf
Co-Investigator

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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	Netland Computers			
1.2. Name and title of the Principal Investigator	Dr.V.Chandrasekar			
1.2. Name and title of the Co-Investigator	Mr.R.Venkatesan			
1.4. Title	Touch Down Aviation Analysis			
1.5. Project duration	3 Years			
1.6 .Cost of Project (lakhs)	8.25			
1.7 Nature of the work	R.W		CON	✓ P-Devp

2. Project Achievements

Automatic and advanced Landing System is fundamental for the current airports to reduce layoff schemes in enhancing the quality of the air traffic. Touchdown aviation is essential to reduce accidents during end state of flying called landing. This system integrates the existing system, which is widespread in the airports today to offer an economic affordable solution for perfect takeoff and Landing with physical ambient parameters like temperature, humidity, wind Speed, direction and visibility with audiovisual networking. It provides fastest data collection and establishes communication between Metrology, Runway, Air Traffic Control (ATC) and the Aircraft. To avoid accidents during end of flying state called touchdown movement.

A real time sensor needs to be employed to acquire the touch down point of the aircraft. During landing huge thrust forces are generated and going along with the line of aircraft is converted into power. Energy harvesting by means of any source of energy became necessary for developing countries. Natural and renewable energy provide clean environment to some areas like airstrip (Run way).Most of the energy harvesting is done through wind source has become

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seasonal and will have huge uncertainty in power quality. To overcome and for power production without uncertainty with enhanced power quality, we like to show a existing concept for a newer area with minimization. A low power and lower size wind turbine can be installed on both sides of the runway to acquire power. The piezoelectric sensors are placed in the runways (airstrip) as layers to provide a perfect touchdown as it can be analyzed through visual basic6.0 where piezoelectric sensors produce small voltage when an impact weight is given to it and also during the touchdown a pressure of air that blows wind turbine which produces energy which can be used for further use.


Principal Investigator


Co-Investigator


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PROJECT COMPLETION REPORT


1. Description

1.1. Name of beneficiary of grant sanctioned	K.G.Lakshmipathy & Co				
1.2. Name and title of the Principal Investigator	Dr.V.Chandrasekar				
1.2. Name and title of the Co-Investigator	Mr.P.Manikandan				
1.4. Title	IOT Software Design for Asphaltic Bitumon Plant				
1.5. Project duration	3 Years				
1.6 .Cost of Project	7.00				
1.7 Nature of the work	R.W		CON	✓	P-Devp

2. Project Achievements

An asphalt plant is a plant used for the manufacture of asphalt, macadam and other forms of coated roadstone, sometimes collectively known as blacktop or asphalt concrete. The manufacture of coated roadstone demands the combination of a number of aggregates, sand and a filler (such as stone dust), in the correct proportions, heated, and finally coated with a binder, usually bitumen based. The temperature of the finished product must be sufficient to be workable after transport to the final destination. A temperature in the range of 100 to 200 degrees Celsius is normal.

The proposed work is to cater the needs of infrastructure development of the nation in the way of introducing Internet Of Things in the area of surface transportation road laying mechanism in advanced technology. Automation and computation process executed in this work. The internet of things (IoT) in transportation and logistics sector. Need for IoT, the architecture of IoT to address various complex issues is described. Applications where IoT could place a


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prominent role in transportation sector also highlighted in the study. Along with the benefits, few related works in transportation and logistics. IoT use would help this sector with many opportunities and benefits. It is highly advisable to adopt the internet of things in to transportation to make it more effective and profitable.

V. Chandra
Principal Investigator

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Co-Investigator

[Signature]
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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	Vintage Fresh				
1.2. Name and title of the Principal Investigator	Mr.R.Pradeep				
1.2. Name and title of the Co-Investigator	-				
1.4. Title	Dairy Farm ERP				
1.5. Project duration	1 Year				
1.6 .Cost of Project (LAKHS)	4.20				
1.7 Nature of the work	R.W		CON	✓	P-Devp

2. Project Achievements

Dairy industry faces challenges such as demand-supply gap, margin pressures, production planning and processing, procurement and distribution, frequently changing demands by the aware consumer, sensitive shelf life of its products, rising health concerns, implementation of the controls required by FSMA and other regulatory requirements, etc. Also, the manufacturers need to continually innovate to meet the requirements of -healthy and clean labels, steep rise in demand of functional foods and protein-rich products. These challenges can't be effectively addressed without the help of dairy ERP solutions.

Moreover, an effective ERP for the dairy business solution takes care of accurate supply chain management starting from collecting of the raw milk to delivery of products to the customers. As a result, this will help in making the process transparent and proficient, which helps businesses in making the supply chain flawless. Moreover, accurate measurement of the products will give you the client satisfaction and increased profit level.

To computerize the stock of the milk in the farm and to generate the monthly bills to the customer based on their daily consumptions and also to maintain the stocks of the feeds in the

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farm. The main objective of this project is to develop general purpose software for event management mainly to computerized the managing process. The proposed software will reduce the paper work as well as manual labour of the company, user friendly, reduction of human efforts, Additional features can be added based on requirements, Reduce time considerably.


Principal Investigator

Co-Investigator


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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	Cosmogens				
1.2. Name and title of the Principal Investigator	Mrs.G.Nalina Keerthana				
1.2. Name and title of the Co-Investigator	Mr.M.K.Mohamed Faizal				
1.4. Title	Online Emission Monitoring				
1.5. Project duration	3 Years				
1.6 .Cost of Project <i>(including)</i>	7.50				
1.7 Nature of the work	R.W	<input checked="" type="checkbox"/>	CON		P-Devp

2. Project Achievements

The Proposed work is to identify the emission created by automotives and delivers pollutant to the environment. A GUI with Internet of Things with the help of Zigbee technology will be ultimate goal of this work. In final the entire transportation movement will be logged on to the national data center. Developing countries due to the lack of proper infrastructure for roads, is one of the reasons for these crashes. In this project we focus on public transportation vehicles - such as buses, and mini-buses -, where the goal of the project is to design and deploy a smart/intelligent unit attached to public vehicles by using embedded microcontroller and sensors and empowering them to communicate with each other through wireless technologies.

The proposed Offline Intelligent Public Transportation Management System will play a major role in reducing risks and high accidents rate, whereas it can increase the traveler satisfactions and convenience. Here, we propose a method, software as well as a framework as enabling technologies to for evaluation, planning and future improvement the public

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transportation system. Our system even though can be as whole or parts can be applied all over the world mostly, target developing countries. This limitation mostly appears by consider off-shelf technologies such as WiFi, GPS and Open Street Maps (OSM).

G. Nalina Keethana
Principal Investigator

M.K.M.J.T
Co-Investigator

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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	M.I.E.T Engineering college					
1.2. Name and title of the Principal Investigator	Dr.M.Vijayasarathy					
1.2. Name and title of the Co-Investigator	Mr.P.Manohar					
1.4. Title	Regenerative Elevator with IOT					
1.5. Project duration	Three years					
1.6 .Cost of Project	Rs.7,50,000/-					
1.7 Nature of the work	R.W	✓	CON		p- Devp	

2. Project Achievements

Regenerative Elevator with IOT application that allows to inform the technicians or the maintenance company of elevators on the failures that they can present in their operation, thus avoiding that people are trapped in the elevators or have periods of outside of service very extensive. An application is implemented in the cloud that will be responsible for receiving the data from the elevator communications module, processing them and if necessary sending a notification to the technicians in elevators. Achievements are

1. Monitoring the operating conditions like critical safety circuits, loading weighing, number of trips, number of door cycles, wait times etc.,
2. Predictive Maintenance - The biggest immediate time-saver that IoT data fuels is improving your preventive maintenance schedule and switching to more of a predictive maintenance model. The devices can monitor changes in operating conditions, like heat, friction or noise, and use the changes to predict when the elevator needs maintenance.

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3. Remote and diagnostics and troubleshooting -. With IoT, the elevator maintenance company knows immediately and probably before the building doe that the elevator is out of service.

Principal Investigator

Co-Investigator

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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	M.T.E.T Engineering College			
1.2. Name and title of the Principal Investigator	D.Tamilselvan			
1.2. Name and title of the Co-Investigator	K.Arunkumaran			
1.4. Title	Analysis of Short Transmission Lines			
1.5. Project duration	3 Years			
1.6 .Cost of Project	Rs.6,20,000/-			
1.7 Nature of the work	R.W	<input checked="" type="checkbox"/>	CON	P-Devp

2. Project Achievements

DC transmission system, the ant colony algorithm and transform transmission line fault signal analysis method are proposed, and the method is applied to the fault location of the DC fault and the fault identification of the commutation failure. After the transmission line fails, quickly and accurately find the fault point and deal with it, which is of great significance for maintaining the normal operation of the power system.

Aiming at the problems of low accuracy of traditional traveling wave fault location methods and many affected factors, this paper relies on distributed traveling wave monitoring points arranged on transmission lines to study methods to improve the accuracy of traveling wave fault location on transmission lines. First, when a line fails, a traveling wave signal that moves to both ends will be generated and transmitted along the transmission line. Ant colony algorithm to analyze and verify the location and extent of transmission line faults and then optimizes high-precision collection and processing.

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Finally, the simulation distance measurement is carried out on double-terminal transmission lines and multiterminal transmission lines (T-shaped lines) with branches. The results show that, for double-ended transmission lines, the algorithm increases the speed of matrix calculations and at the same time makes the fault location error of the transmission grid still maintain the improved effect.

However, this method uses the energy of different nodes as fault characteristics for different faults, and the output of the network is different. In the follow-up, the feature vector extraction of the two faults needs to be further integrated and unified to simplify the control and protection system and all the monitoring as well detection process is done with front end visual basic.

Principal Investigator

Co-Investigator

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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	M.I.E.T ENGINEERING COLLEGE
1.2. Name and title of the Principal Investigator	D.Tamilselvan
1.2. Name and title of the Co-Investigator	E.Muthu kumaran
1.4. Title	Automated Load Sharing and Shedding
1.5. Project duration	THREE Months
1.6 .Cost of Project	Rs. 7.50,000/-
1.7 Nature of the work	R.W ✓ CON P- Devp

2. Project Achievement

Electric utilities load shed when there is huge demand for electricity exceeding supply or if power generated is less than the consumers demand, the need to shed load is eminent in order to avoid total breakdown of equipment's used by power distribution companies as a result of overloading effect. So, this project is about automatic load management system for optimized and automatic load shedding.


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In our implemented hardware, we successively protect our power transformer during peak load and share the burden to the other slave transformer and monitoring the conditions and load over transformer in a control room. Overloaded transformer once shifts its load will not be able to take load back if it is unloaded. This is the flaw of the research, but this is open for further research. Through the numerical results, we conclude that the proposed load sharing method could effectively detect anomaly states. Finally, these results reveal the vulnerability of the load sharing systems and emphasize the necessity of load management and monitoring this management via modern communication device. Meanwhile, it is dispensable to study the characteristics of load management and development of modern methods.

Principa. Investigator

Co-Investigator

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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	M.I.E.T Engineering college
1.2. Name and title of the Principal Investigator	Mr. M. Kirubakaran
1.2. Name and title of the Co-Investigator	Mr. P. Pradeep
1.4. Title	Cotton seed packing cover
1.5. Project duration	Three years
1.6 .Cost of Project	Rs.7,50,000/-
1.7 Nature of the work	R.W ✓ CON P- Devp


2. Project Achievements

Scope: Form fill seal machine used for spillless packing could make cotton seeds industries clean and economic. A pneumatic machine which is controlled electrically using PLC is designed for customer requirements.

Module covers

Two factors are needed to make the modern cotton packaging, storage and transport system effective: a well-formed module that resists moisture collection and a cover that prevents both moisture penetration and wind loss. Module tarp construction

Canvas was used to cover the earliest modules, and the importance of that protection was demonstrated by the development of a standard for cotton modules that included the performance and design of canvas covers


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Cover surface materials

All modern covers are made of a plastic material (typically polyethylene), either as a film or woven from tapes of differing sizes. The woven fabrics may be coated on either one or both sides, and the coatings can be polyethylene or polyvinyl chloride.

Mesh netting

Plastic mesh netting is sometimes used instead of module covers to limit wind losses in the more arid cotton producing areas, as it is assumed that the modules will not be exposed to rain.


Principal Investigator

Co-Investigator


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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	M.I.E.T ENGINEERING COLLEGE
1.2. Name and title of the Principal Investigator	Mr. M.Kirubakaran
1.2. Name and title of the Co-Investigator	Mr. M.Dhandayuthabani
1.4. Title	ON BOARD DIAGNOSTIC SYSTEM
1.5. Project duration	THREE YEARS
1.6 .Cost of Project	Rs. 5,25,000
1.7 Nature of the work	R.W <input type="checkbox"/> CON <input checked="" type="checkbox"/> P-Devp <input type="checkbox"/>

2. Project Achievements

Scope:

Future drive assistant system along with onboard diagnostic system (OBD) is available in high end cost can be brought to low cost cars for extreme safe and reliability.


Achievements:

The work has completed within three years.

The OBD provides access to status information and Diagnostic Trouble Codes (DTCs) for:

Power train (Engine and transmission)

Emission Control Systems


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Additionally, you can access the following vehicle information via the OBD :

- Vehicle Identification Number (VIN)
- Calibration Identification Number
- Ignition counter
- Emissions Control System counters

The OBD System gives maximum safe and reliable.


Principal Investigator

Co-Investigator


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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	M.I.E.T Engineering college
1.2. Name and title of the Principal Investigator	Dr. C. Ahilan
1.2. Name and title of the Co-Investigator	Mr.M.Visvam
1.4. Title	Computerised engine analysers
1.5. Project duration	Three years
1.6 .Cost of Project	Rs.5,50,000/-
1.7 Nature of the work	R.W <input checked="" type="checkbox"/> CON <input type="checkbox"/> P- Devp <input type="checkbox"/>

2. Project Achievements

Scope: Analysis of efficiency of automotive engines may improve the quality and life span of engine. The parameters like indicating efficiency, frictional efficiency and brake thermal efficiency and in final mechanical efficiency calculated using computerized systems.

The portable engine analyzer is a professional tool for testing overall performance of vehicle engines. Operation parameters for the test are received from the engine by capturing the primary and secondary ignition signals, injection signal and sensor signal in real time. There is also support for integration with several other devices: emission analyzers, smoke meters, test lanes, as well as diagnosis scanners. y The analyzer can save, load, play, and print out test results that can be used in engine status judging and troubleshooting. The built-in help system keeps manufacturer's technical data of more than 2000 vehicle models. Combined with a smart trolley stand and various adaptors & cables, it's a complete system.


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The new instrument has the following key features. y Test and data analysis of primary/secondary ignition waveform, spark energy and waveform characteristics for normal ignition (distributor) engine y Test and data analysis of primary/secondary ignition waveform, spark energy and waveform characteristics for single cylinder (independent) ignition engine y Test and data analysis of primary/secondary ignition waveform, spark energy and waveform characteristics for double cylinder (DIS) ignition engine y Power balance test and analysis y Cylinder efficiency test and analysis y Test and analysis of starting current, voltage and their waveform.

CAU
Principal Investigator

Co-Investigator

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PROJECT COMPLETION REPORT

1. Description

1.1. Name of beneficiary of grant sanctioned	M.I.E.T ENGINEERING COLLEGE
1.2. Name and title of the Principal Investigator	Dr.K.Ramesh
1.2. Name and title of the Co-Investigator	Mr.T.Ramkumar
1.4. Title	Thermal Conductivity Analysis of Metal
1.5. Project duration	THREE YEARS
1.6. Cost of Project	Rs. 5,50,000
1.7 Nature of the work	R.W <input checked="" type="checkbox"/> CON <input type="checkbox"/> P. Dev <input type="checkbox"/>

2. Project Achievements

Scope:

Thermal Conductivity Analysis of Metal of assorted metal is necessary to find to select the metals for specific Thermal application. A Proven Long pin Theory and generally graphically plotted Thermal conductivity comparator is developed for the client omega industries.

Achievements:

The objective of this work is to present reference data for selected metals including the most pure research materials and the more commonly produced commercially pure materials.

Generally speaking this includes impurities up to about the 1 % level. The reference data are based on a critical analysis and correlation of the best experimental data.


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Only two variables (temperature and residual electrical resistivity) are used to correlate the selected experimental data. There are numerous factors that complicate the establishment of the uncertainty of this correlation.

First, there is the direct thermal conductivity measurement uncertainty. It has been found that 5-10% uncertainties are common and occasionally data are found in error by as much as 50%..

Second, literature data are frequently found for inadequately characterized specimens, i.e., the investigator did not report such factors as residual resistivity, purity, anneal condition, and specimen size. In addition, these factors are frequently not determined for the exact specimen measured. Third, there are uncertainties introduced by extracting literature data by reading small graphs and sometimes from extrapolated equations.

Finally, the uncertainty of the reference data is dependent on the validity of the correlation equation used. Therefore, the reference data presented here, for a wide range of purities, are probably not as accurate as those that can be obtained from the accurate measurement of a single specimen;

But they do represent the best available data for the entire family of specimens considered.

Principal Investigator

Co-Investigator

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