



Criterion No. 3

3.3.2 Research Publication and Awards

INDEX

1.	Number of research papers per teacher in the journals notified on the UGC website during the year	1
2.	Publication Details	7



3.3.2: Number of papers published per teacher in the Journals notified on the UGC website during the year 2023-24

3.3.2.1.: Number of research papers in the Journals notified on the UGC website during the year 2023-24

Year	2023-24
Number	34

Data Requirement: (As per Data Template):

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISS Number	Link to the recognition in UGC enlistment of the Journal
Biomedical Prosthetics	Prof. Nikhil A Kale	Mechanical	International Journal of Scientific research in Engineering and Management IJSREM	Jun-24	2582-3930	https://ijsrem.com/download/research-and-development-in-biomedical-prosthetics/
Biomedical Prosthetics	Prof. Yashraj Chopkar	Mechanical	International Journal of Scientific research in Engineering and Management IJSREM	Jun-24	2582-3930	https://ijsrem.com/download/research-and-development-in-biomedical-prosthetics/
Structural Analysis of Bobbin Thread Removal Mechanism	Prof. Ankush Hatwar	Mechanical	ISTE Journal			
Structural Analysis of Bobbin Thread Removal Mechanism	Prof. Rahul R Gorpude	Mechanical	ISTE Journal			
Passive Solar Energy Building	Mr. Rohit P. Deshmukh	Civil Engineering	International Journal for Research in Applied	Apr-24	321-9653	https://www.ijraset.com/research-paper/passive



			Science & Engineering Technology			-solar-energy-building
Polymer Fiber Reinforced Concrete Pavement	Mr. Rohit P. Deshmukh	Civil Engineering	International Journal of Creative Research Thoughts	24-May	2320-2882	https://www.ijert.org/view/full.php?&p_id=IJCRT2405453
Sustainable Construction Material	Mr. Rohit P. Deshmukh	Civil Engineering	International Journal of Advanced Research in Arts, Science, Engineering & Management	24-Jun	2395-7852	
Analysis and Design of water distribution network for Jabalpur conurbation board area	Mr. Rajesh Ingole	Civil Engineering	International Journal of Modern Trends in Science & Technology	24-May	2455-3778	www.ijmtst.com/volume10/issue05/1311MJST1005044.pdf
Solid Waste Management for Sakoli City	Mr. Rajesh Ingole	Civil Engineering	Journal of Emerging Technologies and Innovative Research	24-May	2349-5162	
The impact of Jal Jeevan Mission on Rural Water Supply: Assessment, design of distribution network and analysis	Mr. Rajesh Ingole	Civil Engineering	International Journal of Modern Trends in Science & Technology	24-May	2455-3778	
Recycling of Grey Water into usable water by using natural Coagulants	Mr. Rajesh Ingole	Civil Engineering	Journal of Emerging Technologies and Innovative Research	24-May	2349-5162	
Improvement in effluents water quality of STP using latest	Mr. Rajesh Ingole	Civil Engineering	International Journal of Research and	24-May	2348-1269	

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technologies in pimpri chinchwad municipal corporation			Analytical Reviews			
Optimization techniques for E-waste collection system	Mr. Rajesh Ingole	Civil Engineering	International Journal of Innovation Research in Technology	24-Jun	2349-6002	
Oil Spill: Their impact, Recovery and future prevention	Mr. Rajesh Ingole	Civil Engineering	International Journal of Modern Trends in Science & Technology	24-May	2455-3778	
Centralized Research & Development Parliament System For New Innovation	Prof. Prachi Bhure	Computer Engineering	International Journal for Engineering Applications and Technology (IFEAT)	2024	2321-8134	
Waste Wise Management System	Prof. Tejal Hirekhan	Computer Engineering	International Journal of All Research Education and Scientific Methods (IJARESM)	2024	2455-6211	
College Student-Admin Portal	Prof. Prachi Bhure	Computer Engineering	International Research Journal of Engineering and Technology (IRJET)	2024	2395-0072	
Fund of Employers-GPF	Prof. Prachi Bhure	Computer Engineering	International Journal of All Research Education and Scientific Methods (IJARESM)	2024	2455-6211	

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Ventilator with Blood Oxygen Sensing for COVID Pandemic Using Arduino Microcontroller	Ms. Ankita V. Rekkawar	Department of Electronics and Telecommunication Engineering	IRJMETS (UGC Care Listed)	15 th May 2024		
Liquid Level Monitoring & Fire detection Temperature & Humidity Control System using IoT	Ms. Ankita V. Rekkawar	Department of Electronics and Telecommunication Engineering	IRJMETS (UGC Care Listed)	13 th May 2024		
Technique used for Automation in Agriculture	Ms. Ankita V. Rekkawar	Department of Electronics and Telecommunication Engineering	IJASEM (SCI)	May 2024		
Technique used in Fluid Level Monitoring System	Ms. Ankita V. Rekkawar	Department of Electronics and Telecommunication Engineering	IJASEM (SCI)	May 2024		
Smart Vending Machine based on the Internet of Things (IoT) Accept Online Payments.	Ms. Ankita V. Rekkawar	Department of Electronics and Telecommunication Engineering	ICSET (International)	Dec 2023		
Automatic in EnviroSense smart waste system: Revolutionizing waste management through IoT.	Ms. Ankita V. Rekkawar	Department of Electronics and Telecommunication Engineering	IJRASET (UGC Care Listed)	Dec 2023	2321-9653	
Use of IoT and Augmented Reality for automation.	Ms. Reshma Pawar	Department of Electronics and Telecommunication Engineering	IJRASET (UGC Care Listed)	3 rd Oct 2023		
Smart Vending	Ms. Reshma	Department of	ICSET	Dec		

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Machine based on the Internet of Things (IOT) Accept Online Payments.	Pawar	Electronics and Telecommunication Engineering	(International)	2023		
IoT Based Water Level Monitoring & Controlling System using Arduino Uno ESP8266 Module.	Ms. Rucha Shastrakar	Department of Electronics and Telecommunication Engineering	IRJMETS (UGC Care Listed)	31 st May 2024		
Water Level Monitoring System using Internet of Things Using ESP8266 Wi-Fi Module	Ms. Rucha Shastrakar	Department of Electronics and Telecommunication Engineering	IRJMETS (UGC Care Listed)	19 th May 2024		
Automatic Wire Cutter System with Winder using Arduino Nano	Ms. Rucha Shastrakar	Department of Electronics and Telecommunication Engineering	IRJMETS (UGC Care Listed)	17 th May 2024		
Location Based analysis of transportation material impact on portable water using IoT.	Ms. Rucha Shastrakar	Department of Electronics and Telecommunication Engineering	ICASEM (International)	23 rd Dec 2023		
Data analytics on impact of transportation material on consumable water supply chain.	Ms. Rucha Shastrakar	Department of Electronics and Telecommunication Engineering	ICASEM (International)	23 rd Dec 2023		
Data analytics on impact of transportation material on consumable water supply chain.	Ms. Rucha Shastrakar	Department of Electronics and Telecommunication Engineering	ICMEIHCD (International)	11 th Nov 2023		
Automatic Wire Measuring & Cutting	Ms. Yogita Raut	Department of Electronics	IRJMETS (UGC Care Listed)	30 th May		

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machine using 8051 Microcontroller System		and Telecommunication Engineering	Listed.)	2024		
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Smart Vending Machine based on the Internet of Things (IoT) Accepts Online Payments.	Mr. Amit Gedam	Department of Electronics and Telecommunication Engineering	ICSET (International)	1 st Dec 2023		
EnviroSense smart waste system: Revolutionizing waste management through IoT.	Mr. Nikul Shenode	Civil Engineering	IJRASET (UGC Care Listed)	Dec 2023	2321-9653	
EnviroSense smart waste system: Revolutionizing waste management through IoT.	Ms. Neha Kavathe	Science & Humanities Engineering Department.	IJRASET (UGC Care Listed)	Dec 2023	2321-9653	
Microbial Fuel Cells for Bioelectricity Generation: Current Innovations, Challenges, and Future Prospects	Mr. Nikul Shenode	Civil Engineering	IJRASET (UGC Care Listed)		2321-9653	
The impact of kaizen practices on inventory management in supply chains: a comprehensive review of performance metrics	Dr. Athar Javed Ali, Prof. Shriya Kalbunde, Prof. Minakshi Shendre	MBA	SATRACHI	2023		https://ugccare.unipune.ac.in/Apps1/User/WebA/Scare.html


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Research and Development in Biomedical Prosthetics

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ABSTRACT:-

In this report the sole data is based on innovation and development in biomedical prosthetics field. The current technology used for prosthetic includes 3D printing, device implants, digital design tools and more. There are several types of biomedical engineering, such as tissue, genetic, neural and stem cells, as well as chemical and clinical engineering for health care. Many electronic and magnetic method uses sensors in equipment such as Computed Tomography (CT) scans, Magnetic Resonance Imaging (MRI) scans, Electroencephalography (EEG). The notation of the idea is using sensors in body supporting equipment's or an attachment as prosthetics with the incorporation of AI that could get results in movement or functioning in any nonfunctioning body part as desired.

INTRODUCTION

General working concept is that in biomedical engineering the prosthetics mainly use for lost body part or non-functioning part as the working medium and to improve lifestyle and relived from physical and mental pain.

Now new technology and advancements, Enhancements in prosthetics have a sense of touch that can be added to Prosthetic hand so that new prosthetic hand can offer amputees an ability to "feel" grasping and manipulating objects and it's already being used at home, outside the laboratory setting for several months.

HISTORY AND INNOVATIONS

A team of biomedical engineers from Florida International University (FIU), Arizona State University, and Cochlear Corporation, has leveraged existing cochlear implant technology to create this Food and Drug

Structural Analysis of Bobbin Thread Removal Mechanism

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ABSTRACT

In this paper, we have developed new concept of thread removal from the bobbin. For this purpose, we have developed mechanism which have named as a "Bobbin thread removal" from the bobbin. We are designing Bobbin thread removal mechanism which is stable and work efficiently.

KEYWORDS: *Bobbin, Thread.*

INTRODUCTION

A plastic bobbin consisting of a hollow cone defined by a thin-walled sheath includes an inner skeletal frame of longitudinally-spaced circumferential ribs and radially-spaced longitudinal ribs defining an inner support surface for a mandrel with a sheath having segments of varying wall thickness and the outer surface having a constant taper with respect to the bobbin axis. Some of the longitudinally-extending ribs may be partial ribs defined in each of the segments.

This invention relates generally to cores upon which filamentary material such as yarn or thread are to be wound and, more particularly, to an improved lightweight bobbin fashioned as a one-piece hollow conemolded from plastic material. One such material found to be useful is polypropylene, which allows certain features of the bobbin to be molded in precise detail.

For purposes of simplicity, the filamentary materials with which the present invention is intended to be used will be referred to generally as "yarn", with the understanding that other filamentary materials are included as well.

Manufacture of yarn is carried out as a continuous operation, and as part of the manufacturing process, machines have been developed to automatically package yarn by winding it onto bobbins for storage, shipment, and sale.

CONSTRUCTION

A bobbin construction to be gripped by a mandrel, said bobbin being of the type having the configuration of a one-piece hollow cone having a central axis, said cone molded of plastic, said cone having a tip end and a base end, a thin-walled sheath having an inner surface and an outer surface, and an inner skeletal frame of longitudinally-spaced circumferential ribs and circumferentially-spaced longitudinal ribs supporting said sheath, said bobbin comprising: said outer surface formed at a first constant taper with respect to said axis; at least one section of said inner surface formed at a second taper, each said inner surface section and said outer surface defining there between a sheath segment of varying thickness; said longitudinal ribs including at least one partial rib in said varying thickness sheath segment having a substantially constant thickness to produce a varying thickness rib in said varying thickness sheath segment; means formed on said inner surface to provide a gripping site for said mandrel; and, a circumferentially-extending ridge formed in said outer surface extending in a helical pattern from proximate said base end to proximate said tip end.

DESIGN PROCEDURE

To solve the stated problem of thread removal, we have developed new concept of thread removal from the bobbin. For this purpose, we have developed mechanism which have named as a "Bobbin thread removal" from the bobbin.

TECHNIQUES USED IN FLUID LEVEL MONITORING SYSTEMS

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Abstract

Fluid level monitoring systems play a critical role in various industrial, commercial, and residential applications, ensuring efficient management and utilization of liquids in tanks, reservoirs, and pipelines. This paper presents a comprehensive review of fluid level monitoring systems, focusing on their principles of operation, types, applications, and advancements. The review encompasses traditional methods such as float switches, sight glasses, and ultrasonic sensors, as well as emerging technologies including capacitance sensors, pressure transducers, and optical sensors. The review highlights the importance of fluid level monitoring in diverse industries such as manufacturing, chemical processing, water management, and agriculture. Accurate and reliable fluid level measurement is essential for maintaining process efficiency, preventing overflows or leaks, and ensuring compliance with regulatory standards. Furthermore, the paper discusses the challenges associated with fluid level monitoring, including environmental factors, fluid properties, and compatibility with different liquids and container materials. Advancements in sensor technology, wireless communication, and data analytics have led to the development of intelligent fluid level monitoring systems capable of real-time monitoring, remote management, and predictive maintenance. Fluid level monitoring systems play a vital role in ensuring the safe, efficient, and sustainable management of liquids in various industrial and commercial settings. This review provides insights into the principles, applications, challenges, and advancements in fluid level monitoring, offering valuable information for researchers, engineers, and practitioners seeking to design, implement, and optimize fluid level monitoring systems for diverse applications.

Keywords: Automation, IoT, fluid

1 Introduction

Fluid level monitoring systems are essential components in numerous industrial, commercial, and residential settings, facilitating the efficient management and control of liquids in tanks, reservoirs, and pipelines. These systems play a critical role in ensuring operational efficiency, safety, and regulatory compliance across a wide range of applications. As the demand for accurate and

reliable fluid level measurement continues to grow, there is a pressing need to review and assess the various technologies, methodologies, and advancements in fluid level monitoring. This paper presents a comprehensive review of fluid level monitoring systems, examining their principles of operation, types, applications, challenges, and recent developments. The accurate measurement of fluid levels is

MICROGREENS KIT AUTOMATION USING IoT

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Abstract

Microgreens are young, edible plants that have gained popularity recently due to their variety of colors and flavors, high concentration of phytonutrients, quick development cycle, and low space and nutritional requirements. They may be grown in a range of systems, from straightforward home gardens to intricate vertical farms with computerized lighting, irrigation, and fertilizer supply. Space agencies have also been interested in microgreens, presumably because of their sensory properties that might improve astronauts' diets in microgravity and because their cultivation could support crew members' physical and mental well-being during extended spaceflight missions. Nonetheless, there are still a lot of unanswered technological questions and data gaps about the growth of microgreens on and outside Earth. This study outlines recent research on a variety of topics related to microgreens, such as their nutritional and economic advantages, growing methods, and operating circumstances, creative solutions, self-contained buildings, and possible space uses. A new method for growing microgreens that uses the Mqtt protocol to allow for remote parameter control. Lighting is crucial in an indoor growing environment without an external or natural light source, but not all bulbs are made equal. Depending on the type of crop and the stage of growth, plants require different amounts and qualities of light. As a result, automation is required. Using a clever method, the microgreens automation system keeps your plants in the necessary amount of light. You may typically grow year-round with indoor farming since it is not dependent on external factors like sunshine or rain. Smart microgreens farming is an automated system that can regulate any season.

Keywords: Microgreens , Nodemcu, grow lights.

1 Introduction

Recently, there has been a surge in the popularity of microgreens, which are little plants that are picked at the complete cotyledon growth and appearance of real leaves. These seedlings have benefits over mature plants because of their flavor and color combinations, quick growth cycle, and other characteristics. Furthermore, the nutritional profiles of microgreens vary greatly depending on the species and are rich

in phytonutrients. Microgreens may be generated by a variety of sophisticated methods, from mass production using

cutting-edge controlled environment agriculture (CEA) technology to at-home growing on potting mix or capillary mat. The plethora of advantages associated with microgreens has spurred research and development of new technologies, a trend that has intensified in the 2020s. The

VENTILATOR WITH BLOOD OXYGEN SENSING FOR COVID PANDEMIC USING ARDUINO MICROCONTROLLER

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ABSTRACT

This article describes the structure of the low voltage generator. Efforts to develop ventilators stem from a shortage of ventilators used to treat Covid-19 patients.

The spread of Covid-19 has reached very high levels in some regions, especially poor areas. Low voltage generators are designed to reduce negative effects in these areas. This tool is for commercial use only. This article also describes people being treated for lung cancer. This method considers the pressure of the inspiratory limb and immediately informs the doctor whether the patient is healthy or not. Clinical studies simulating healthy and unhealthy patients have demonstrated the benefits of ventilators.

Keyword: - Mechanical ventilator; low-cost ventilator; COVID-19; pressure sensor; Artificial ventilation; health monitoring.

I. INTRODUCTION

The increasing demand for ventilators to treat COVID-19 patients over the years has led to a global shortage of ventilators. The consequences of this famine are especially devastating in poor areas. Even good hospitals may have procedures for two patients to share the same breath, but this practice is questionable because sharing different illnesses between patients is not only possible but also potentially dangerous.

In response to the world's shortage of ventilators, scientists have developed a project to produce cheap ventilators. This article contributes to this work. Scientists agree that respirators can damage the lungs and cause lung damage.

The two most common types of injuries are volume injuries and atelectasis injuries. Acute injury occurs when hyperventilation dilates the airways and alveoli, causing excessive stretching of the corresponding lung parenchyma. Volumetric trauma causes an inflammatory response that ultimately leads to rupture of the alveolar wall and edema.

Rather, atelectasis appears to result from hypoventilation. Bad breathing causes the alveolar spaces in the lungs to repeatedly and continuously expand and reopen, causing injury.

To prevent atelectasis, most scientists recommend that doctors use positive airway pressure (PEEP) while breathing. Based on evidence obtained after sperm donation, PEEP has become a popular tool for preventing atelectasis. Payment letter. These studies suggest that ventilators may help patients with breathing difficulties, but a full understanding of ventilators requires more research.

II. METHODOLOGY

All experiments were performed with I:E fixed at 1:2, Vt at 5 breaths per minute, and FR at 350 ml. When doctors try to distinguish between the following symptoms, their similarities can be confusing. Carefully designed algorithms are needed to improve the distribution of these signals.

This article is far from a surprise for the new algorithm for breathing. We also see in Figure 9 that there is a difference of approximately 0.02 volts between the breathing connections.

From an engineering perspective, this change may be related to the low-frequency response of the elastic stimulus (lungs). This also determines the sensitivity of the pressure sensor used.

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III. MODELING AND ANALYSIS

DESIGN OF EXPERIMENTATION AND INSTRUCTION

Hardware & Software:

Express PCB Software:

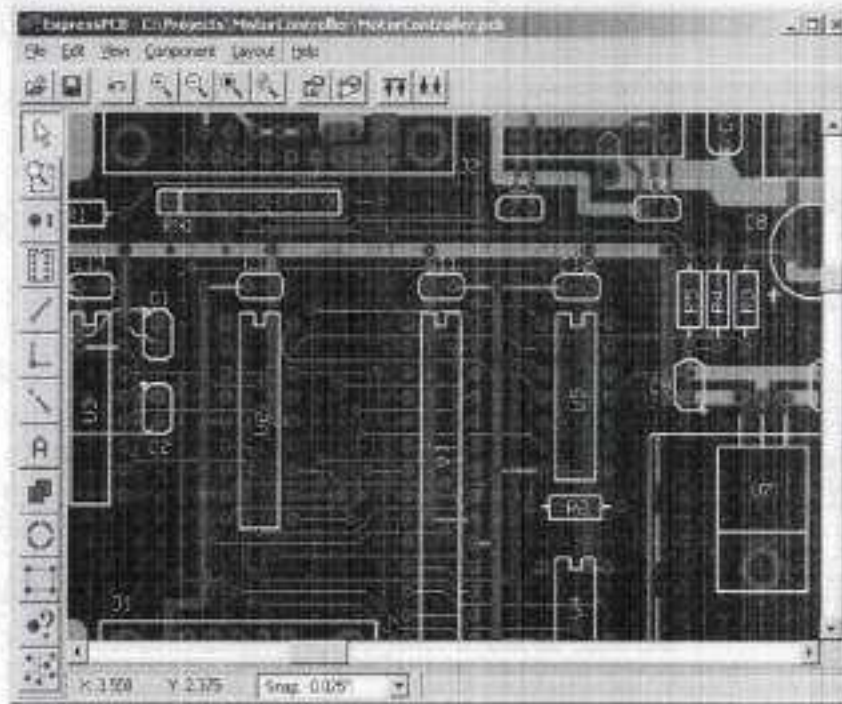


Figure1: PCB Layout

IV. RESULTS AND DISCUSSION

Express PCB's results and discussions are divided into two parts: our CAD software and our circuit services. Our CAD software includes Express SCH for schematic drawing and Express PCB for electronic circuit design. After completing your PCB design, we ensure low cost, high quality and fast delivery of your products. How does this work. We recommend that you start your project by drawing with Express SCH. A schematic is not necessary, but it will save you time when building the board and reduce the chance of incorrect wiring. Then use the Express PCB program to place the PC board. If you connect your schematic to the Express PCB, the program will guide you through the wiring process by showing you how the components are connected. Once the installation is complete, you can use the cost calculator to determine the cost of building the panel. To order a card, simply enter your name, address, and billing information into the Express PCB and click the submit button in the Internet Card dialog box. Overnight Express will ship your PC card within a few business days (usually 2 or 3 business days). You'll notice that there are two toolbars, one at the top and one on the left. At the bottom of the screen is the status bar.



Figure 2: Animated ventilator with hand

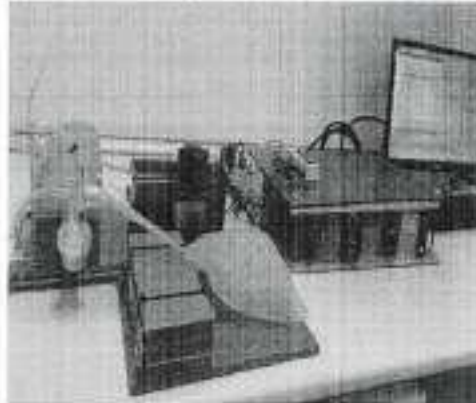


Figure 3: Experimental setup of Ventilator of blood oxygen

V. CONCLUSION

Since the emergence of Covid-19, scientists have been working to help people cope with the problems caused by the epidemic. We also bear the names of the authors of new initiatives: production of low-energy products, open air. The motivation stems from the shortage of ventilators used to treat COVID-19 patients and keep critically ill patients alive. This article describes the development of a high-performance, low-cost outdoor fan. The authors' contribution to this topic is to reduce the impact of dangerous and unfortunate global respiratory failure in adverse environments. This article describes a way to monitor the health of a patient's lungs. This practical and simple numerical method can also be used with other breathing techniques. In summary, this article has both theoretical and practical contributions. The device may have an alarm, clock, or speaker that alerts the doctor when the pressure reaches a certain threshold. Message received from the project team, such as completed images and information.

ACKNOWLEDGEMENTS

I would like to thank my advisor, Dr. S.N. Waghmare. It was a pleasure to work with him. The research presented in this research article is free of charge. I was lucky to have a mentor who broadened my horizons and gave me the freedom to explore myself.

VI. REFERENCES

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An International Registered Peer Reviewed Bilingual Research Journal

SATRAACHIE

ISSN 2348-8425

सत्राची

A UGC-CARE Enlisted
Peer Reviewed Research Journal

Year 11, Issue 28,
Vol 40,
July-September, 2023

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The Impact of Kaizen Practices on Inventory Management in Supply Chains : A Comprehensive Review of Performance Metrics

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Abstract:

This research study delves into the profound impact of implementing Kaizen principles and practices in supply chain management putting a specific focus on the optimization of inventory management. Organizations, in today's fast-paced business environment, are continuously seeking ways to enhance efficiency and reduce costs within their supply chains. The research explores the strategies and outcomes associated with integrating Kaizen practices into supply chain inventory management. The research methodology encompasses an extensive review of existing literature, comprehensive case studies of organizations that have embraced Kaizen for inventory management, and the development of performance metrics to assess the effects of Kaizen initiatives. The findings of this study provide valuable insights for organizations aiming to optimize their inventory management processes and overall supply chain performance.

Keywords: Kaizen, Inventory Management, Supply chain management, Supply chain performance.

Introduction:

In an era of global competition and dynamic market landscapes, supply chain management plays a pivotal role in the success of organizations across various industries. As companies strive to achieve operational excellence, reduce costs, and enhance customer satisfaction,


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Subscribed :: ISSN 2348-8425 :: 29



EnviroSense Smart Waste System: Revolutionizing Waste Management Through IoT

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Abstract: The EnviroSense Smart Waste System is a slice-edge system that uses the power of the Internet of Things (IoT) to transfigure traditional trash operation processes. As urbanization accelerates and environmental enterprises grow a smart and effective waste operation system becomes increasingly important. The EnviroSense Smart Waste System tackles these issues by combining ultramodern detectors, networking, and data analytics to make a complete and long-term waste operation system. The system's introductory operation entails the installation of smart detectors into waste lockers and holders, allowing for real-time monitoring of scrap situations and composition. These detectors use IoT connection to shoot data to a centralized platform, where it's reused by advanced analytics algorithms. The technology gives practicable data, allowing original governments, waste operation enterprises, and other associations to make better opinions.

Keywords: EnviroSense, Smart Waste System, Internet of Things (IoT), Data Analytics, Waste Operation

I. INTRODUCTION

The EnviroSense Smart Scrap System is a slice-edge system that uses the power of the Internet of Things (IoT) to transfigure traditional trash operation processes. As urbanization accelerates and environmental enterprises grow a smart and effective waste operation system becomes increasingly important. The EnviroSense Smart Waste System tackles these issues by combining modern sensors, networking, and data analytics to make a complete and long-term waste operation system. The system's introductory operation entails the installation of smart sensors into waste lockers and holders, allowing for real-time monitoring of scrap situations and composition. These sensors use IoT connection to shoot data to a centralized platform, where it's reused by advanced analytics algorithms. The technology gives practicable data, allowing original governments, waste operation enterprises, and other associations to make better opinions. The EnviroSense Smart Waste System underscores its commitment to stoner-friendly operation, making it an important tool for cosmopolises, waste operation realities, and citizens. This emphasis on ease of use not only maximizes relinquishment rates but also contributes to the system's overall effectiveness in transubstantiating waste operation practices.

The EnviroSense Smart Waste System Operation Process:

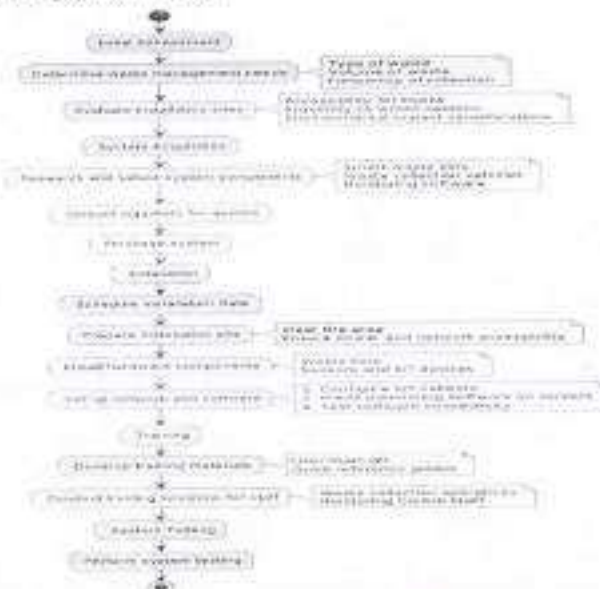


Fig: The EnviroSense Smart Waste System Operation Process



ISSN No. : 2321-9153

IJRASET

**International Journal for Research in Applied
Science & Engineering Technology**

IJRASET is indexed with Crossref for DOI-DOI : 10.22214

Website : www.ijraset.com, E-mail : ijraset@gmail.com

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It is here by certified that the paper ID : IJRASET57006, entitled

EnviroSense Smart Waste System: Revolutionizing Waste Management Through IoT
by
Nakul Rajesh Shenode

*after review is found suitable and has been published in
Volume 11, Issue XI, November 2023
in*

*International Journal for Research in Applied Science &
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EnviroSense Smart Waste System: Revolutionizing Waste Management Through IoT

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¹Civil Engineering, ²Electronics & Telecommunications Engineering, ³Science & Humanities Engineering Department, Swaminarayan Siddhanta Institute of Technology, Nagpur, India

Abstract: The EnviroSense Smart Waste System is a slice-edge system that uses the power of the Internet of Things (IoT) to transfigure traditional trash operation processes. As urbanization accelerates and environmental enterprises grow a smart and effective waste operation system becomes increasingly important. The EnviroSense Smart Waste System tackles these issues by combining ultramodern detectors, networking, and data analytics to make a complete and long-term waste operation system. The system's introductory operation entails the installation of smart detectors into waste lockers and holders, allowing for real-time monitoring of scrap situations and composition. These detectors use IoT connection to shoot data to a centralized platform, where it's reused by advanced analytics algorithms. The technology gives practicable data, allowing original governments, waste operation enterprises, and other associations to make better opinions.

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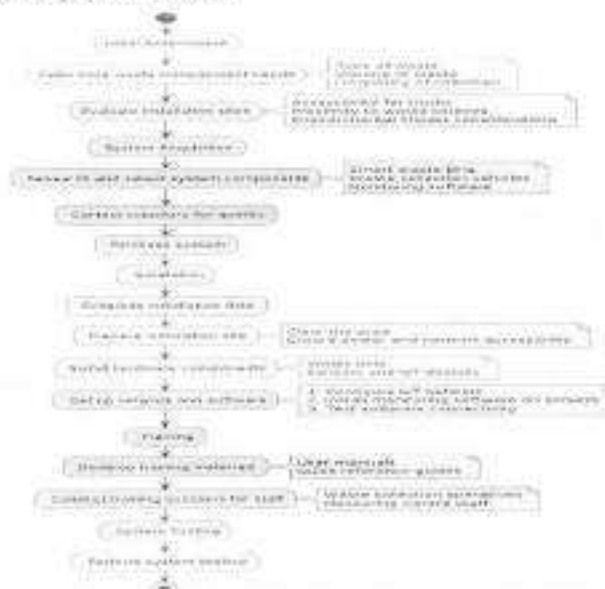


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ISSN No. : 2351-9003

IJRASET

**International Journal for Research in Applied
Science & Engineering Technology**

IJRASET is indexed with Crossref for DOI-DOI : 10.22214

Website : www.ijraset.com, E-mail : ijraset@gmail.com

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SOLID WASTE MANAGEMENT FOR SAKOLI CITY

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Student Professor, Professor
 Environmental Engineering Department,
 Swaminarayan Siddhanta Institute of Technology, Nagpur, India

Abstract : There is an increased generation of solid wastes* due to increased population. Organic waste decomposed quickly and releases acrid odors. The discharge of organic waste attracts flies, rats, and other pests. These vectors spread diseases such as typhoid and cholera, and can also cause diarrhea, eye problems, skin diseases, etc. Inappropriate disposal of solid waste leads to choked drains, an increase in contaminated water bodies, and increase in the mosquito population, and many more diseases. All these will affect the human health of the public by reducing life expectancy and increasing infant mortality. The water, air, and surrounding environment have been affected due to lack of management of solid waste. The contaminated solid waste and leachate from solid waste pollute water bodies. The unauthorized dumping of solid waste causes air pollution and health problems. Improper solid waste management not only threatens the natural beauty of water bodies, forest reserves, diversity-rich mountains, and beaches but also cities and villages. Littering defaces the pleasing beauty of the environment. Cleaner cities are better able to attract private investments and tourists, and thus relate more jobs in the locality. The inflow of investments brings economic prosperity and more revenue to the government, hence satisfactory services to its citizens. This study seeks to assess the better ways to improve solid waste management through improved solid waste storage, collection, and transport processes* before to disposal. The results of this study will add valuable information to be availed to the general public about solid waste collection and transport processes essential elements in solid waste management. Better solid waste management improves the health of all citizens, sustainability of the environment, and beauty of the environment and attracts investors.

Keywords - municipal solid waste, solid waste generation, collection, solid waste management, composting, disposal, reuse, recycle, and recovery...

I. INTRODUCTION

Sakoli is a city as well as a Municipal Council in Bhandara district in the state of Maharashtra (India). It is connected with NH-53 and NH-353C. Sakoli is positioned at 21.08° N × 79.98° E. It has an average elevation of 233 meters (767 feet). It is positioned on Mumbai-Kolkata National Highway 6. Sakoli is well surrounded by lakes, ponds, and hills [of small to medium heights]. Nearly 2-3 km from the city the Chulbhand river flows. The Gondomar Palace is just 10 km away from the city. It is of historical importance due to the presence of Zamindari kingdom memorials* that can still be found today. Two important tourist points, viz., Nagzira National Park and Navegaon Bandh Bird Sanctuary are very close to the city, making* as visitors' the only convenient place. Sakoli is well connected to the major and minor cities. It lies along National Highway 6, which mainly connects Mumbai and Kolkata (via Nagpur, and Raipur). Further cities such as Gondia, Gadchiroli, Chandrapur, etc., are also well-connected through roads and/or rails. Soundad (10 km) & Gondia Junction (60 km) and Nagpur Junction (105 km) are the nearest major railway stations. Another railway station of importance is Saundad (a convenient place to go by train to Gondia and Chandrapur). The nearest airport is Nagpur International Airport (120 km). The city has good education facilities cover from kindergarten to degree program. This city has several schools (Marathi and English), high schools (five Marathi, one English), and one government polytechnic college. Many other degree colleges include B.Pharm, B.Tech, B.A, M.A, B.Sc., M.SC, B-com, M-com, D.Ed., D.Pharm, physical educational institutes, nursing institutes, etc. Sakoli is well known in the Bhandara District for its quality education. Peoples of many religion can be found at Sakoli. A few temples of Lord Durga, Lord Ganesha, Buddha Vihar, and a mosque can be found in the city. The religious festivals, such as to name few, Gudi Padva, Buddha-purnima, Rama Navami, Hanuman Jayanti, Dr. Ambedkar Jayanti, Ashadhi and Kartiki Ekadashis, Gokulashtami, Pola, Ganesh Chaturthi, Durga Puja, Saraswati Puja, Gauripujan, Dasara, Divali, Holi, Muharram, Ramzan Id and Bakri-Id, and few fairs are observed. Sakoli City belongs to the Bhandara district. It is situated on the Northeastern side of Maharashtra state. The total population of the city is 14636 (as per the 2011 census) and the total area of the city is 10.00 Sq.km. The city has 12 Wards. A Detailed study of collection, storage, transport, and disposal of solid waste practices was conducted for Sakoli City. The site has been planned as an integrated facility for Composting, Incinerating, and FSTP plants.

A considerable proportion of organic carbon was found which causes health problems for the dwellers of the city. To avoid this situation small community bins are placed in the nook and corner of the city; in addition, the litter bins are provided as per requirement. Disposal vehicles, Septic tank cleaner machines (suction machines), small auto rickshaws, hand carts, and tricycles are provided to maximize the collection of waste. Still, the services are insufficient, and it is a sincere need to improve the solid



Analysis and Design of Water Distribution Network for Jabalpur Cantonment Board Area

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To Cite this Article

Mohammad Zafar Mohammad Rizwan, Tarun Ghorse and Rajesh Ingole, Analysis and Design of Water Distribution Network for Jabalpur Cantonment Board Area, International Journal for Modern Trends in Science and Technology, 2024, 10(05), pages. 82-91, <https://doi.org/10.46501/IJMST1005013>

Article Info

Received: 19 April 2024, Accepted: 15 May 2024, Published: 15 May 2024

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ABSTRACT

In this research paper, we focus on studying and improving the water distribution network in the Jabalpur Cantonment Board Area. Water distribution networks are critical infrastructures for ensuring reliable water supply to communities. However, in many areas, including Jabalpur, significant challenges related to water distribution efficiency, reliability, and equitable access. The study begins with a comprehensive assessment of the existing water distribution network in the Jabalpur Cantonment Board Area. Factors such as network layout, pipe material, age of infrastructure, and water demand patterns are thoroughly examined to identify existing inefficiencies and areas for improvement. Using advanced engineering tools such as WaterGems and methodologies, an optimized design for the water distribution network is proposed. This design considers factors such as hydraulic efficiency, pressure management, and resilience to minimize water losses and ensure consistent water supply to consumers. Furthermore, the study incorporates considerations for future growth and development in the Jabalpur Cantonment Board Area. By employing sustainable design practices and incorporating modern technologies, the proposed water distribution network aims to meet the present and future needs of the community while minimizing environmental impact. By implementing the proposed design improvements, the Jabalpur Cantonment Board can achieve a more sustainable, efficient, and reliable water supply network, ultimately improving the quality of life for its residents.

Keywords- Water distribution network, Jabalpur Cantonment Board, Hydraulic modelling, Sustainability, Water loss

1. INTRODUCTION

The provision of potable water is an essential service for sustaining life and supporting societal development. In urban areas, water distribution networks play a

pivotal role in ensuring reliable and equitable access to clean water. The Jabalpur Cantonment Board (JCB) area, like many urban regions in India, faces challenges in its water distribution system due to factors such as



The Impact of the Jal Jeevan Mission on Rural Water Supply: Assessment, Design of Distribution Network, and Analysis

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To Cite this Article

Aniket Soge, Tarun Ghorse and Rajesh Ingole, The Impact of the Jal Jeevan Mission on Rural Water Supply: Assessment, Design of Distribution Network, and Analysis, International Journal for Modern Trends in Science and Technology, 2024, 10(05), pages 170-174. <https://doi.org/10.46501/IJMTST1005026>

Article Info

Received: 30 April 2024, Accepted: 23 May 2024, Published: 27 May 2024

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ABSTRACT

The Jal Jeevan Mission (JJM) stands as a pivotal initiative in India, aimed at ensuring access to safe and potable water for every rural household. This research article presents a comprehensive assessment of the impact of the Jal Jeevan Mission on rural water supply, focusing on the design of distribution networks and rigorous analysis of its effectiveness. The study begins with an in-depth assessment of the implementation of the Jal Jeevan Mission, examining its key objectives, strategies, and achievements in expanding access to clean water in rural areas. Drawing on various sources, including government reports, policy documents, and field surveys, the article provides valuable insights into the progress made under the mission, highlighting successes, challenges, and areas for improvement. Moreover, the research article delves into the design of distribution networks under the Jal Jeevan Mission, emphasizing the importance of efficient infrastructure planning and management in ensuring reliable water supply to rural communities. Using Geographic Information System (GIS) mapping, hydraulic modeling, and spatial analysis techniques, the article presents innovative approaches for optimizing the design and layout of distribution systems, considering factors such as population density, topography, and water availability. Furthermore, the article offers a rigorous analysis of the impact of the Jal Jeevan Mission on various socio-economic indicators, including access to water, health outcomes, economic productivity, and gender empowerment. By synthesizing data from household surveys, water quality tests, and socio-economic assessments, the article evaluates the mission's effectiveness in improving living standards and enhancing overall well-being in rural areas.

Keywords- Jal Jeevan Mission, Rural Water Supply, Water Accessibility, Distribution Network Design, Impact Assessment, Sustainable Water Management

Principal



“Recycling of Grey Water into Usable water by using Natural Material”.

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Abstract: Increasing urbanization, industrialization and over population are the factors mainly responsible for adding hazardous components in water which mainly consists heavy metals and chemicals etc. Water bodies are the main targets for disposing the pollutants directly or indirectly. This is a review paper illustrating the role of plants to assist the treatment of Lake (wastewater). The prevailing purification technologies used to remove the contaminants are too costly and sometimes non-eco friendly also. Therefore, the research is oriented towards low cost and eco-friendly technology for waste water purification which will be beneficial for community. The paper discusses the potential of different process and utilization of terrestrial and aquatic plants (Hydrilla) in purifying water and wastewater from different sources.

KEYWORDS: Wastewater, Submerged treatment, Rhizofiltration, Water pollution, Heavy metals.

I INTRODUCTION

Aquatic plants have been used to recover and reuse the waste water and use them for agricultural and industrial purpose, if not for household and domestic use. Low cost, low maintenance and the ability to assimilate nutrients and sediment the inorganic chemicals make the aquatic plant system a promising domestic prospect for waste water management. Aquatic plant system has been accounted as one of the processes for wastewater recovery and recycling. The main purposes of using this system have focused on waste utilization and nutrient removal. The principal removal mechanisms are physical sedimentation and bacterial metabolic activity as in the conventional activated sludge and trickling filter (USEPA, 1991). Plant assimilation of nutrients and its subsequent harvesting are another mechanism for pollutant removal. Low cost and easy maintenance make the aquatic plant system attractive to use. Thus, constructed ponds with aquatic plants are increasingly applied as a viable treatment for municipal wastewater. However, there are some constraints with using aquatic plants such as the requirement for large area of land, the reliability for pathogen destruction, and the types and end-uses of aquatic plants. Submerged Aquatic Plants are oxygenating plants. Plants like hydrilla and tape grass increase the oxygen content of water and remove carbon dioxide from it. Plants also gives enough oxygen for aquatic animals. This leaves have no pores and stomata that's why these plants absorb more carbon dioxide from water and in simple word it will create the process of Rhizofiltration. We all are know so many toxic metals and components are present in lake water so due to the process of Rhizofiltration, this plants easily remove toxic metals and unwanted components from water. We also know about it many peoples are washing their clothes, vehicles, buffalos, cows, etc. and so many peoples are bath in lakes and because of bad human activities like release wastewater into lake, release industrial waste water etc. such activities dirt the lake water. So by using submerged aquatic plants we want to remove toxic substances from water and we will try to make water fresh for use.

II LITERATURE REVIEW

I Divya Singh, Archana Tiwari and Richa Gupts State that, by using floating aquatic plant Duckweed can remove lead from wastewater because it has high absorption capacity. We can also treat the lead from waste water easily. They also state that by using both terrestrial and aquatic plant can absorb, concentrate and contaminants from polluted aqueous sources in their roots. Terrestrial plants are more preferred because they have a fibrous and much longer root system, increasing amount of root area that effectively removed the potentially toxic metals from water.

II K. Mizuno, C. Xc, A. Asada, K. Abukawa, and M. Yamamuro summarize that, using boat for knowing the place of Submerged Aquatic Plants by using GPS antenna, motion sensor and GPS receiver they also found that at which depth the all types of aquatic plants are to be present.

Principal

Optimization Techniques for E-Waste Collection System

SHRUTIJA VIJAY MESHARAM¹, AKASH INGOLE², RAJESH INGOLE³
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Abstract- Electronic waste (e-waste) is one of the most talked about issues in the world today due to its potential to reduce environmental hazards and pollution. In this study, material flow analysis (MFA) and site-specific validation have been applied to estimate the theoretical waste arising for each item in the study area. The results obtained from this analysis have been compared with the assumptions to validate the average life of the electronic item assumed in the sensitivity analysis. The study shows that improper management of electronic waste can have significant negative impacts on the environment and human health. The exponential growth in electronic waste (e-waste) presents significant environmental and health challenges globally. Traditional waste management practices are insufficient to handle the complex and hazardous nature of e-waste, necessitating an innovative and sustainable approach. This paper proposes an advanced e-waste collection system designed to enhance the efficiency, effectiveness, and environmental sustainability of e-waste management.

Index Terms- E-Waste, Electronic Waste, Sustainable Waste Management, Collection System, Environmental Sustainability, Public Awareness, Recycling, Hazardous Waste Electronic Waste, E-Waste Pollution, E-Waste Management.

I. INTRODUCTION

Electronic waste, commonly referred to as e-waste, encompasses discarded electrical or electronic devices. These devices include everything from old smartphones and laptops to refrigerators and televisions. E-waste is one of the fastest-growing waste streams globally, driven by the rapid pace of technological innovation and consumer demand for the latest gadgets.

E-waste poses significant environmental and health hazards due to the presence of hazardous materials such as lead, mercury, cadmium, and brominated flame retardants. Improper disposal of e-waste, such as throwing devices into landfills or incinerating them,

can lead to soil, air, and water pollution, as well as human exposure to toxic substances.

Moreover, e-waste contains valuable and scarce resources like gold, silver, copper, and rare earth metals. Recycling e-waste not only mitigates environmental harm but also conserves precious resources and reduces the need for mining virgin materials.

The management of e-waste presents complex challenges that require coordinated efforts from governments, businesses, consumers, and other stakeholders. Effective e-waste management involves collection, recycling, and responsible disposal practices, as well as awareness-raising and policy interventions.

As society becomes increasingly reliant on electronic devices, addressing the e-waste problem is imperative for sustainable development and environmental protection. By adopting responsible e-waste management practices, we can minimize the negative impacts of e-waste while harnessing its potential for resource recovery and circular economy principles.

E-waste, or electronic waste, refers to discarded electrical or electronic devices. This category encompasses a wide range of products including computers, mobile phones, televisions, and household appliances such as refrigerators and washing machines. The rapid advancement in technology, coupled with high rates of consumption and short product lifespans, has led to a significant increase in e-waste globally.



Oil Spill: Their Impact, Recovery and future prevention

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Department of Civil Engineering, Swaminarayan Siddhanta Institute of Technology, Kalmeshwar, India.

To Cite this Article
Anam Anjum and Rajesh Ingoie, Oil Spill: Their Impact, Recovery and future prevention, International Journal for Modern Trends in Science and Technology, 2024, 10(05), pages 117-123. <https://doi.org/10.46501/IJMST1005018>

Article Info

Received: 23 April 2024; Accepted: 14 May 2024; Published: 16 May 2024

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ABSTRACT

An oil spill is the release of a liquid petroleum hydrocarbon into the environment, especially marine areas, due to human activity. Oil is the most common pollutant in the ocean. Oil spill has a devastating and long-term impact on water ways and coastal areas around the world. Oil spill can be partially controlled by chemical dispersion, combustion, mechanical containment and adsorption. These days there are so many import and export business are going in the world. Because of expansion of business and shipping by seas in the cheapest mode it's used for large scale and huge cargo shipping these are so many cases of oil spill in the sea. World has witnessed big oil spill accidents into the oceans and made huge impact on the industries as well as the ecosystem. Due to these oil spills there were so many deaths of sea mammals and bird species. After oil spills creates a slick (a thick layer of oil) that prevent the sunlight and oxygen pass through water. It affects the life below the water due to lack of oxygen and sunlight. As some of the oil are flammable and poisonous they are quite harmful for human too when it comes to physical contact with them. This paper deal with the separation of oil and water to find out the better solution for oil recovery from the water surface mixture employ oil skimmer, oil spill recovery, water. There are different methods to remove the oil from the water of these type oil skimmer is mostly used and affective into oil skimmer used to separate oil from mixture of water and oil. It has a highly acidic alkaline and salty environment remain a great challenge to aquatic organism and also pollute the coastal area. Every year 706 million gallons of waste oil enter the water, pollute and damage the environment. Sea water has been polluted due to oil spillage, it also affect the water bodies. If the oil spill increase it result in serious damage to environment. About 90% of contaminated oil can be removed by continuous separation of oil by skimmer.

Keywords— oil skimmer, ecosystem, chemical dispersion, combustion

1. INTRODUCTION

Background of the Study

An oil spill is the release of a liquid petroleum hydrocarbon into the environment, especially marine areas, due to human activity, and is a form of pollution. Oil is the most common pollutant in the oceans. More than 3 million metric tons of oil contaminates the sea every year. The majority of oil pollution in the oceans

comes from land, runoff and waste from cities, industry and rivers carries oil into the ocean. Ships cause about a third of the oil pollution in the oceans when they wash out their tanks or dump their bilge water. The kind of oil spill we usually think about is the accidental or intentional release of petroleum products into the environment as result of human activity (drilling, manufacturing, storing, transporting, waste

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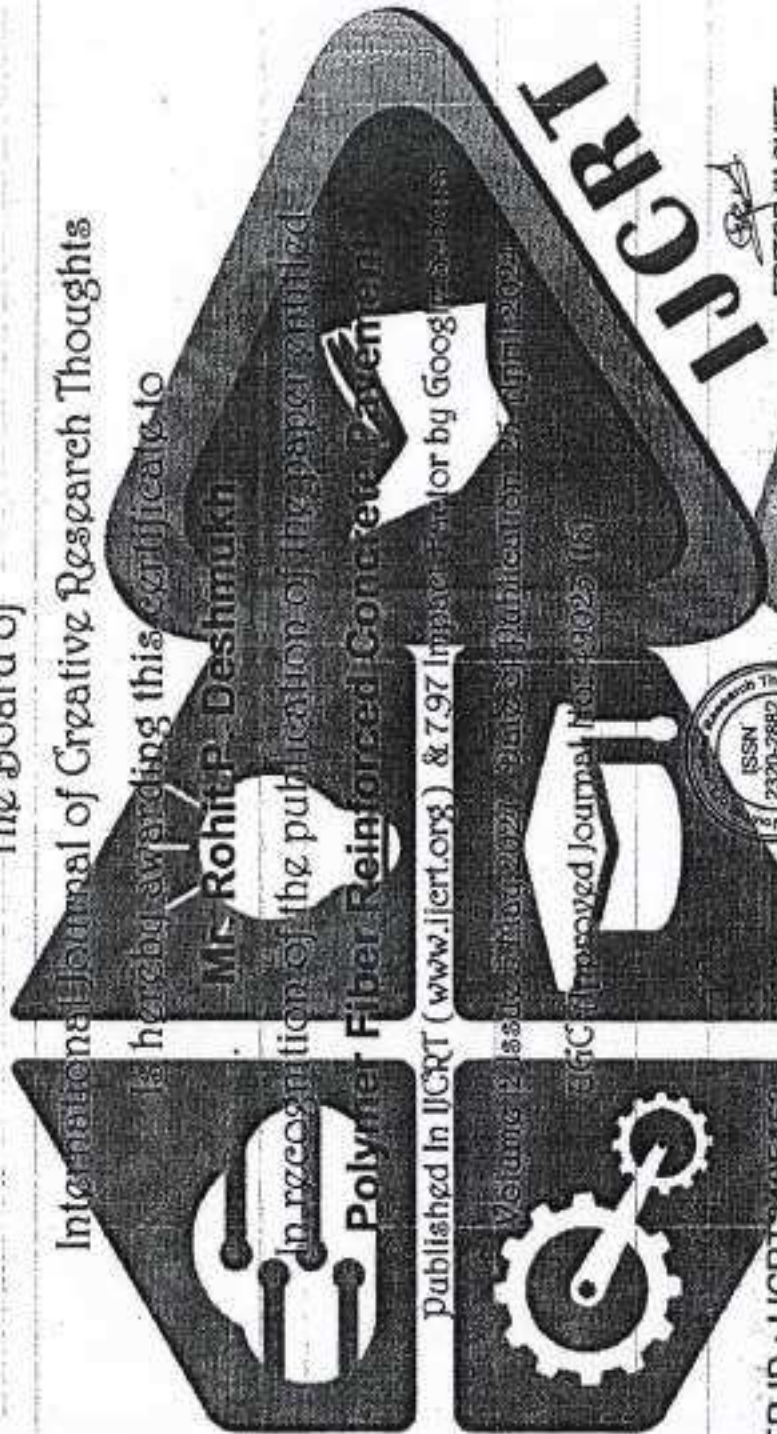
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ISSN No. 2321-9553

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IJRASET is indexed with Crossref for DOI: 10.22214

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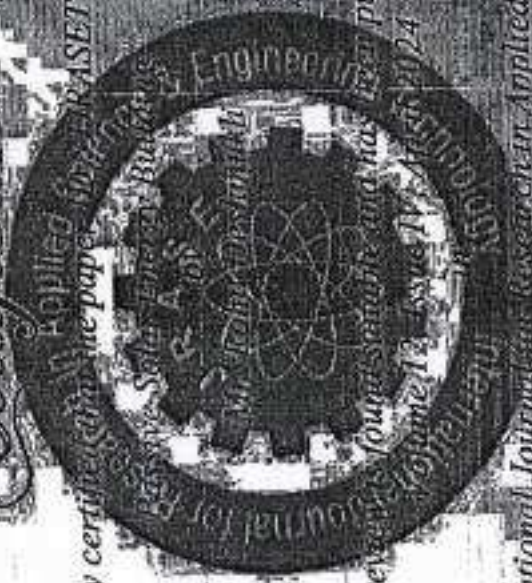
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**"A Research Article on "Sustainable Construction
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in IJARASEM, Volume 11, Issue 3, May-June 2024



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e-ISSN: 2582-5208

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e-ISSN: 2582-5208

Ref: IRJMETS/Certificate/Volume 06/Issue 05 /60500079097

Date: 13/05/2024

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IJRASET is indexed with Crossref for DOI-DOI : 10.22214

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ISSN 2319 - 8508

Volume - XI, Issue - II, May - October - 2023

Impact Factor 2023 - 7.878 (www.sjifactor.com)



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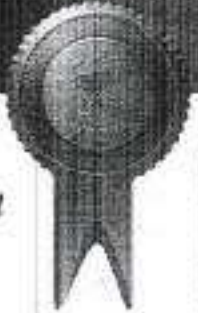
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Ref: IRJMETS/Certificate/Volume 06/Issue 05/60500173523

Date: 31/05/2024

Certificate of Publication

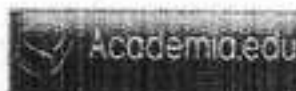
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e-ISSN: 2582-5208

Ref: IRJMETS/Certificate/Volume 06/Issue 05 /60500173610

Date: 19/05/2024

Certificate of Publication

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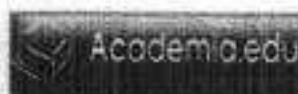
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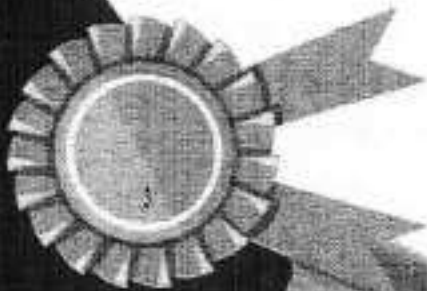
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e-ISSN: 2582-5208

Ref: IRJMETS/Certificate/Volume 06/Issue 05/60500155173

Date: 29/05/2024

Certificate of Publication

This is to certify that author "Prof. Yogita Raut" with paper ID "IRJMETS60500155173" has published a paper entitled "AUTOMATIC MULTIWIRE CUTTING MACHINE USING PNEUMATIC SYSTEM WITH ARDUINO MEGA MICROCONTROLLER" in International Research Journal Of Modernization In Engineering Technology And Science (IRJMETS), Volume 06, Issue 05, May 2024

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Ref: IRJMETS/Certificate/Volume 06/Issue 05/60500170552

Date: 30/05/2024

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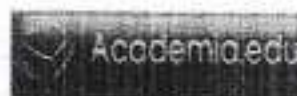
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EnviroSense Smart Waste System: Revolutionizing Waste Management Through IoT

Nakul Rajesh Shenode¹, Ankita Vijay Rekkawar², Neha Jagdish Kawathe³

¹Civil Engineering, ²Electronics & Telecommunications Engineering, ³Science & Humanities Engineering Department, Swaminarayan Siddhanta Institute of Technology, Nagpur, India

Abstract: The EnviroSense Smart Waste System is a slice-edge system that uses the power of the Internet of Things (IoT) to transfigure traditional trash operation processes. As urbanization accelerates and environmental enterprises grow a smart and effective waste operation system becomes increasingly important. The EnviroSense Smart Waste System tackles these issues by combining ultramodern detectors, networking, and data analytics to make a complete and long-term waste operation system. The system's introductory operation entails the installation of smart detectors into waste lockers and holders, allowing for real-time monitoring of scrap situations and composition. These detectors use IoT connection to shoot data to a centralized platform, where it's reused by advanced analytics algorithms. The technology gives practicable data, allowing original governments, waste operation enterprises, and other associations to make better opinions.

Keywords: EnviroSense, Smart Waste System, Internet of Things (IoT), Data Analytics, Waste Operation

I. INTRODUCTION

The EnviroSense Smart Scrap System is a slice-edge system that uses the power of the Internet of Things (IoT) to transfigure traditional trash operation processes. As urbanization accelerates and environmental enterprises grow a smart and effective waste operation system becomes increasingly important. The EnviroSense Smart Waste System tackles these issues by combining modern sensors, networking, and data analytics to make a complete and long-term waste operation system. The system's introductory operation entails the installation of smart sensors into waste lockers and holders, allowing for real-time monitoring of scrap situations and composition. These sensors use IoT connection to shoot data to a centralized platform, where it's reused by advanced analytics algorithms. The technology gives practicable data, allowing original governments, waste operation enterprises, and other associations to make better opinions. The EnviroSense Smart Waste System underscores its commitment to stoner-friendly operation, making it an important tool for cosmopolises, waste operation realities, and citizens. This emphasis on ease of use not only maximizes relinquishment rates but also contributes to the system's overall effectiveness in transubstantiating waste operation practices.

The EnviroSense Smart Waste System Operation Process:

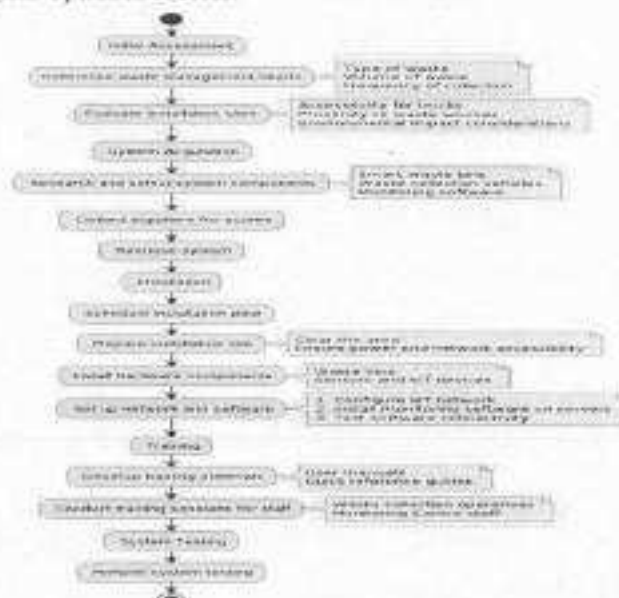


Fig: The EnviroSense Smart Waste System Operation Process

TECHNIQUES USED FOR AUTOMATION IN AGRICULTURE

¹ Prof. Ankita Rekkawar, ² Kundan Tarafdar

¹ HOD

^{1,2} Department Of Electronics & Telecommunication

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Abstract

For every nation, the primary issue and burgeoning topic is agriculture automation. The need for food is rising quickly along with the world's population, which is growing at an extremely rapid rate. Farmers are forced to damage the land by applying more toxic pesticides since their traditional methods aren't enough to meet the growing demand. This has a significant impact on agricultural practices and in the end, the land is still unproductive and bleak. This article discusses many automation techniques, including deep learning, machine learning, artificial intelligence, and wireless communications. Certain aspects of the agricultural field are problematic, such as crop diseases, improper storage management, improper use of pesticides, improper weed control, inadequate irrigation, etc. Deciphering concerns including the use of hazardous pesticides, regulated irrigation, pollution management, and environmental repercussions in agricultural operations is urgently needed today. It has been demonstrated that automating farming operations increases soil productivity and improves soil fertility. This study provides a quick review of the present state of farm automation by surveying the work of several researchers.

Keywords: Agriculture , Automation, farm, irrigation

1 Introduction

Agriculture has long been the backbone of India's economy, providing livelihoods to millions and ensuring food security for its vast population. In recent years, the agricultural sector has witnessed a transformative shift driven by technological advancements and automation techniques. This review aims to provide a comprehensive overview of the automation techniques employed in Indian agriculture, highlighting their impact on productivity, sustainability, and rural development. The adoption of automation in agriculture has been spurred by various factors, including the need to address labor shortages, improve efficiency, and

optimize resource utilization in the face of changing climatic conditions and growing demand for food. Automation technologies encompass a wide range of applications, from precision farming and mechanization to the use of robotics, drones, and artificial intelligence (AI) in crop monitoring, irrigation management, pest control, and harvesting operations. One of the key areas where automation has made significant strides is precision agriculture, which involves the use of advanced technologies to tailor farming practices to specific field conditions and crop requirements. By employing sensors, GPS technology, and data analytics, farmers can optimize inputs

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VENTILATOR WITH BLOOD OXYGEN SENSING FOR COVID PANDEMIC USING ARDUINO MICROCONTROLLER

Prof. Ankita V. Rekkawar^{*1}, Achal N. Hajare^{*2}

^{*1}Assistant professor, Department of Electronics & Telecommunication Engineering Swaminarayan Siddhanta Institute of Technology Nagpur, Maharashtra, India

^{*2}Student, Department of Electronics & Telecommunication Engineering Swaminarayan Siddhanta Institute of Technology Nagpur, Maharashtra, India

ABSTRACT

This article describes the structure of the low voltage generator. Efforts to develop ventilators stem from a shortage of ventilators used to treat Covid-19 patients.

The spread of Covid-19 has reached very high levels in some regions, especially poor areas. Low voltage generators are designed to reduce negative effects in these areas. This tool is for commercial use only. This article also describes people being treated for lung cancer. This method considers the pressure of the inspiratory limb and immediately informs the doctor whether the patient is healthy or not. Clinical studies simulating healthy and unhealthy patients have demonstrated the benefits of ventilators.

Keyword: - Mechanical ventilator; low-cost ventilator; COVID-19; pressure sensor; Artificial ventilation; health monitoring.

I. INTRODUCTION

The increasing demand for ventilators to treat COVID-19 patients over the years has led to a global shortage of ventilators. The consequences of this famine are especially devastating in poor areas. Even good hospitals may have procedures for two patients to share the same breath, but this practice is questionable because sharing different illnesses between patients is not only possible but also potentially dangerous.

In response to the world's shortage of ventilators, scientists have developed a project to produce cheap ventilators. This article contributes to this work. Scientists agree that respirators can damage the lungs and cause lung damage.

The two most common types of injuries are volume injuries and atelectasis injuries. Acute injury occurs when hyperventilation dilates the airways and alveoli, causing excessive stretching of the corresponding lung parenchyma. Volumetric trauma causes an inflammatory response that ultimately leads to rupture of the alveolar wall and edema.

Rather, atelectasis appears to result from hypoventilation. Bad breathing causes the alveolar spaces in the lungs to repeatedly and continuously expand and reopen, causing injury.

To prevent atelectasis, most scientists recommend that doctors use positive airway pressure (PEEP) while breathing. Based on evidence obtained after sperm donation, PEEP has become a popular tool for preventing atelectasis. Payment letter. These studies suggest that ventilators may help patients with breathing difficulties, but a full understanding of ventilators requires more research.

II. METHODOLOGY

All experiments were performed with I:E fixed at 1:2, Vt at 5 breaths per minute, and FR at 350 ml. When doctors try to distinguish between the following symptoms, their similarities can be confusing. Carefully designed algorithms are needed to improve the distribution of these signals.

This article is far from a surprise for the new algorithm for breathing. We also see in Figure 9 that there is a difference of approximately 0.02 volts between the breathing connections.

From an engineering perspective, this change may be related to the low-frequency response of the elastic stimulus (lungs). This also determines the sensitivity of the pressure sensor used.

LIQUID LEVEL MONITORING AND FIRE DETECTION TEMPERATURE AND HUMIDITY CONTROL SYSTEM USING IOT

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DOI : <https://www.doi.org/10.56726/IRJMETS55876>

ABSTRACT

Nowadays, almost all communication uses the internet, but not everything can communicate with each other. Things in the Internet of Things can be anything we use every day. In this project, the "things" are liquid containers. Why choose liquid packaging? Since a large part of the product volume of the liquid decreases after the use of the liquid in the liquid container, we should also remember other processes in which the liquid container is used in industry. Many times, we forget to turn off the valve or pump while watering, causing water to flow out and creating wastewater. Therefore, we propose to use IoT technology to solve this problem. Our method uses an ESP8266 controller to monitor the level of the liquid container. This controller will automatically turn the pump or valve on and off so that the liquid does not flow and go to waste. We use ultrasonic sensors to control the liquid. We use Blynk IoT service and PHP web programming for water monitoring and control. We tested this system on a 64cm liquid container. The liquid level control error of the system is 2cm. We created this project for work, liquid is not just water, it can also be chemical or liquid like oil or any other liquid which can catch fire when exposed to air or other conditions, This is what we use due to fire. It is a versatile device that can be used in many locations to monitor liquid levels through temperature and humidity sensors and fire sensors to ensure safety.

I. INTRODUCTION

The Internet has become a necessity in the global society. Thanks to the internet, people can communicate easily and quickly. With the help of the Internet, people in different countries can easily interact with people in other countries. The internet not only connects people, everything can communicate with each other. This concept is called the Internet of Things. The Internet of Things (IoT) is the concept of objects being able to transfer data over a network without the need for a human-to-human or human-to-computer. IoT devices can be things we use every day, such as heart rate monitors, sensors that warn the driver when the battery in tires is low, trash cans that warn users when the soil is full. The Internet of Things involves machine-to-machine communication.

Internet of Things mainly includes Intel Edison, Intel Galileo, Raspberry Pi, Arduino, etc. In the future, the Internet of Things will be used to provide business analysis data, provide information to company departments during production, etc. It will receive various messages from sensors for things. We need to package it in such a way that the amount of liquid in the box decreases each time we use it and can be reused by other users later. Usually, when filling liquid, we have to wait for the liquid in the liquid container to fill. Waiting time, we often forget to turn off the pump or valve when filling the liquid because it takes a long time to wait for the liquid to collect and most of the time we are lazy to wait and turn off the pump chest or valve. So, when we forget to turn off the pump or valve and the container fills with water, the liquid flows out and becomes waste. We create these jobs for business. Liquids are not just water, they can also be chemicals, oils or other flammable substances that can catch fire when exposed to air or other substances, so how do we use fire? It is a universal device that can be used in all industries to monitor liquid levels to ensure temperature and fire safety. It can be used for any type of business based on customer needs.

II. PROBLEM STATEMENT

The necessity of this system is to prevent wastewater. Sometimes people forget to turn off the engine when the tank is full due to waste water. The program is designed to prevent wastewater use. Using this water meter, we can monitor the water level and water usage.

AUTOMATIC WIRE CUTTER SYSTEM WITH WINDER USING ARDUINO NANO

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DOI : <https://www.doi.org/10.56726/IRJMETS55873>

ABSTRACT

When electrical equipment or devices are installed, cables and wires form the "objects" that carry current or impulse. After installation, cutting and wrapping the cables is the easiest job of the system. System like "Automatic Robotic Cutter Using Arduino Nano Wire Winder" give users the ability to work easily and save time. This feature has two connections that can work simultaneously, Arduino is the main board that monitors and controls all electronic devices. The pulse generator uses 2 electrical components. The first source is a 5V source for the Arduino Nano. The second source is 12V and is connected to the motor driver as a stepper motor. Use 2 stepper motors as feeder and cutter. The feed motor serves as a cable feeder for the cutting machine. This circuit works when the length and cable are fixed. Next is the cylinder and winder circuit. This circuit is powered by 12V. Power supply motors are very easy to use, fast and have little grip. The circuit can be used as a method of wrapping and pulling out the cable if it gets stuck somewhere while connecting. Finally, using Arduino models to cut wires and cables can provide an easy way to solve electrical and electronic problems.

Keywords: Key Words: Wire Cutter And Winder, Electrical And Electronic Wiring Work, Arduino Nano Automatic System.

I. INTRODUCTION

Cables are the most important thing. Many methods are required to complete wiring or soldering. Cutting cables when connecting electricity is one of the tasks performed during cable installation. When testing is completed, wiring is done. However, a lot of cable waste occurs after installation. This is because the cables are usually larger because the length of the cable is shorter to ensure that the cable is not stretched. Research was conducted on different platforms to solve this problem. Research shows that currently most electronic devices use only metal EDM. Most experts (PW4) use "sleeve" type cable cutters. The project aims to identify and solve problems. Measuring and cutting metal is a labor-intensive process that requires workers. The call will be closed. By using this type of technology, employees can save time and even improve performance measurement. Besides, there were also problems when the cable is bent or loose. In this case, it will take longer for workers to return. This is because the cable is heavy and stiff. Long, loose coils of cable usually require two people to untie. Research was conducted on different platforms to solve this problem. This design must have a strong body. Although the winding machine is already on the market. However, most of the winding machines are used for large cables such as underground and overhead cables. Because domestic industrial technology inventions still need to be developed.

The next task is to pull the cable to assist the operator (PW4) or electrician in his work. This is the feature of this project. In this section, cable pullers are mentioned. Cable pullers require no human effort. Designed to help electricians pull wires into conduit. Generally, cabling projects are done in groups. Because if workers work alone, the job becomes difficult. We look at the tools local workers used to complete the project. The study recommended the use of "cable pullers".

The current project, called "Automatic Cable Cutter and Reel Using Arduino", uses an electric motor and uses Arduino as the controller for all movements and signals. The project combines hardware and software to determine size and power requirements. The user can adjust the number of cables to be cut by pressing the switch, and it can also be used in cable pulling and winding machines.

II. METHODOLOGY

A block diagram was used to represent the system structure and involved process flow. Figure 1 illustrates the block diagram of this system.

**WATER LEVEL MONITORING SYSTEM USING INTERNET OF THINGS USING
ESP8266 WI-FI MODULE****Prof. Rucha R. Shastrakar¹, Payal Meshram²**¹Assistant professor, Department of Electronics & Telecommunication Engineering Swaminarayan Siddhanta Institute of Technology Nagpur, Maharashtra, India²Student, Department of Electronics & Telecommunication Engineering Swaminarayan Siddhanta Institute of Technology Nagpur, Maharashtra, India**ABSTRACT**

A talented innovator with great ideas, he can deliver better results than existing systems. This project is about connecting to a Node MCU (with wi-fi module for communication) to control the water in the water tank and send the status of the water tank to the Blynk application via Arduino idea code. This gives the idea of connecting things in the organization to create better development. Nowadays everything depends on advanced batteries and their applications. From this perspective, this research will be useful in the future. The main purpose of this framework is to detect water in rural areas, detect wastewater and take flood prevention measures in these areas that are difficult to detect.

Keywords: IoT, Wi-Fi and Buzzer, Arduino IDE, Blynk Application, Relay, Ultrasonic Sensor, HC 12 Module, ESP8266

I. INTRODUCTION

One of the most important things in the world is water. The project uses Internet of Things (IoT)-based concepts to determine energy savings in water meters. The main purpose is to monitor the water level and install sensors that will inform users about the water level in the tank. Because the ultrasonic sensor is placed at the top of the water tank, if the water from the sensor rises, we will calculate the water level after a while, which means the water in the tank water is too high. For example, the system should send a message to the user. Its main function is an ultrasonic sensor that detects the water level (distance) from the top of the water tank to the bottom of the water tank. The sensor interacts with the MCU's Wi-Fi system (ESP8266). The Blynk library is installed and connected to the Arduino IDE. Blynk app is used to receive invoices and send notifications to mobile users. The user may be notified that the tank is empty and can take other steps to refill the tank.

II. LITERATURE REVIEW**2.1 Existing System**

The system does not include water level monitoring, which is expensive and difficult to maintain. The accuracy of the water meter is low. The user experience is clear for everyone. It provides greater accuracy and saves time. This system does not have a water pressure monitoring function.

2.2 Proposed System

This water meter is based on a new and more powerful Android application. It is very easy to store. The price is low and the water is not uniform. The system uses the Blynk app to display water levels. Use Blynk Android app in online mode for circuit breaker (on/off) and water meter. The Blynk app is also used to schedule the engine on/off and monitor the water level. Can accurately measure the water level in the tank.

IMPLEMENTATION

Ultrasonic sensors measure the distance between the top of the tank and the water and alert the user when the water falls below a certain limit. This project will first install the ultrasonic sensor and MCU node etc. ties. After the connection is completed, the product will connect to the software. Then there are rules for decision panels in the software. Code can only be executed and sent when the device and hardware are configured correctly. Arduino software only provides content such as code and Blynk (mobile app) notifications to the user. The software code also needs to be linked to the Blynk library. The main requirement is that the ultrasonic sensor can detect the water level (distance) from the top of the tank to the bottom of the tank.

AUTOMATIC MULTIWIRE CUTTING MACHINE USING PNEUMATIC SYSTEM WITH ARDUINO MEGA MICROCONTROLLER

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ABSTRACT

This article presents the design and development of automatic robotic cutting machines. Today, metal cutting and measuring is time-consuming and labor-intensive. The truth is that traditional rules are not good. Automated systems can solve operational problems, save costs, increase accuracy and reduce human error. Our goal is to achieve lower cutting costs, faster and shorter cutting times thanks to automation. The main purpose of automatic wire cutting machine is to cut a certain length of wire into required wire. This system uses pneumatic pressure and Arduino for cutting operations. In our project, solenoid valves are used for automation purposes. The metal cutting machine works with the help of pneumatic single-acting pneumatic cylinders. That's why we created an automatic robot welding machine that provides greater precision, reduces human error, ensures efficiency, reliability and saves spare parts.

Keywords: Solenoid, Arduino Mega, LCD Display, Keypad, Automatic Wire Cutting.

I. INTRODUCTION

Working in an underdeveloped small business is a big problem in today's business world. Many workers have difficulty obtaining an ID card. As a result, business owners suffer great losses and cannot achieve profits and targets. Industrial automation systems can solve this problem very well. Automated systems can solve operational problems, save costs, increase accuracy and reduce human error. After reviewing a large number of electrical and electronic industries, I found that many companies do some car bodywork but do not require metal cutting, packaging, etc. I found that it didn't. We see that they did not. We see that the problem is still not solved. Resources for implementing this process. If we add automation to this simple process, it will improve in many ways and benefit the development and growth of the company. These businesses realized they needed a good, fast and economical solution for cutting the large amounts of metal needed to make panels. Measuring and cutting metal is always work. The preparation process automatically calculates the length of the wire and is cut by the cutting machine.

This project is based on Arduino, which is easy to use and flexible. The system can measure the length of the wire as input. The motor is driven by the Arduino at the desired speed (revolutions per meter). This cutting tool is designed to measure the length of metal.

II. PROPOSED SYSTEM

The proposed system has all the additional features of the existing system. Create a bill of materials database with the specifications of the necessary cables for the balcony. It also includes the process of cutting the wire to the desired length.

AUTOMATIC WIRE MEASURING & CUTTING MACHINE USING 8051 MICROCONTROLLER SYSTEM

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ABSTRACT

In small businesses, more time is required as the metal must be cut by hand. In automatic EDM machines, a stepper motor moves tooth between two wires that guide the metal into the cutting area. Adjust the length of the wire to be cut according to the length measurement and adjust the wire to the required value. The motor is then disabled and the incisors are energized. This automatic cutting machine enables processing of wires like straight line. Therefore, automating this simple process will be beneficial for the growth of the company as it will improve the process in many aspects.

Keywords: AT-Atmel, DC-Direct Current, IC - Integrated Circuit, WCCM-Wire Cutting & Crimping Machine, MC-Micro-Controller.

I. INTRODUCTION

Working in an underdeveloped small business is a big problem in today's business world. Often workers chase income, resulting in reduced productivity and employment. For this reason, business owners have to endure huge losses and fail to achieve the desired goals and objectives. Industrial automation systems can solve this problem very well.

Automated systems can solve operational problems, save costs, increase accuracy and reduce human error. After examining various electrical and electronic businesses, I found that many businesses are now starting to use electronic systems in some of their systems, but metal cutting, packaging, etc. We have seen this becoming widespread in places like. It is necessary to hire people. resources. If we add automation to this simple process, it will improve in many aspects as well as benefit the company's development and growth results.

In an automatic EDM machine, a serrated roller driven by a DC motor is placed between two guide wires to drive the metal into the cutting area. The length of the wire to be cut is adjusted on the long bench. The length counter counts the number of times the wire has been driven over a certain distance. The DC motor is then disabled and the blade is energized. This system prevents the blade cut-off solenoid valve from operating in a short circuit below its duty cycle. This automatic cutting machine is a fully electric, microprocessor-controlled, desktop machine for processing wire, round and flat cables.

II. OBJECTIVE & SCOPE

The aim of this project is to design and build a non-electric generator to achieve low cost. It works fast and reduces cutting time. This tool does not use built-in space. This machine is simple and portable. This machine uses angles, rollers, guides, cutters and a control unit to control all functions of the machine. The main purpose of the automatic wire cutting machine is to cut the desired length of wire into the desired wire.

The objectives of the project are to design a system for an automatic wire cutting machine which is:

- Automation
- Reduce strenuous and repetitive task
- Functional requirement of proposed system
- Respond as per user's input
- Display user's input
- Multi-length wire input

IOT BASED WATER LEVEL MONITORING & CONTROLLING SYSTEM USING ARDUINO UNO ESP8266 MODULE

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ABSTRACT

Water is very necessary in today's life. Considering the need for water, liters of water are wasted in daily life. We are developing an IoT-based water monitoring and control system that will reduce wastewater and stop water flow by controlling the water in the tank to prevent wastewater. Water level monitoring solves this problem by providing accurate information about the water level using ultrasonic sensors that understand the water level and compare it with the depth of the tank to ensure that water in the tank is not wasted. The system also uses an Arduino Uno, a buzzer and an LCD screen to display the water in the tank and the status of the motor.

Keywords: Arduino Uno, Ultrasonic Sensor, Liquid Crystal Display, Buzzer.

I. INTRODUCTION

Water is very important, we cannot live without water. Therefore, wastewater must be managed for the benefit of our environment and living things. Most of the time we start the engine but forget to turn it on, so most of the water is wasted without realizing it. This leads to water scarcity. The system is designed to monitor water resources in rural areas and protect water in sensitive areas. By monitoring the water in the water tank, the system can turn on the electric pump when the water tank is empty and turn off the electric pump when there is enough water. The engine's status is displayed on the LCD screen as "ENGINE ON" or "ENGINE OFF" along with a beep to help users understand the information. The system eliminates routine tasks such as filling water tanks and controlling water flow. This allows you to control the water level in the tank. These systems can be used in restaurants, warehouses, schools and anywhere water level control is required.

II. PROBLEM STATEMENT

The necessity of this system is to prevent wastewater. Sometimes people forget to turn off the engine when the water tank is full due to waste water. The program came to prevent wastewater use. Using this water meter, we can monitor the water level and water usage.

III. LITERATURE SURVEY

An automatic water meter has been developed [1]. Arduino Uno is used to perform the pump design process [1]. Measuring the water in the water tank and pressure tank and changing the pump are the main points of the cycle [1]. Liquid crystal displays (LCDs) are used to display information on the screen [1]. In addition, a microcontroller-based automatic water meter measurement and control, including design and implementation issues, has been proposed [1].

Hani and Myaing (2011) developed a microcontroller-based water flow control system. This system uses an automatic water control system and can also be used as a control system [1]. A measurement unit, a photoelectric generator and a slotted disk are used to generate a pulse equal to the input frequency of the microcontroller [1]. The sensor signal is calculated as frequency and converted to flow rate using the software program in the PIC [1]. Compare the flow rate with the set value [1]. Based on this comparison, PIC16F628 can use a DC motor to control the valve to change the flow [1].

Definition Agricultural land management is synonymous with water conservation [3]. Hydrological studies are necessary to select alternative land uses, agriculture and their spatial plans [3].

Olambimpe (2010) studied the design and construction of automatic control pump with water meter [4]. The design includes automatic control with digital circuitry to turn the pump on and off and an indicator that warns