



Vivekananda College of Engineering & Technology

[A Unit of Vivekananda Vidyavardhaka Sangha, Puttur @]

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PRJ-
Projects
List
14/06/2024

ME Projects List: 2023-24

MECHANICAL ENGINEERING PROJECTS LIST -AY 2023-24						
SNo	Dept	Guide	USNs	Title	Status	Abstract (100 words)
1	ME	Prof. Naveenakrishna P V	4VP21ME400 4VP21ME404 4VP21ME409 4VP21ME414	DESIGN & FABRICATION OF AUTOMATED PHOTOVOLTAIC PANEL CLEANER	Working	The solar PV modules are generally employed in dusty environments which is the case in tropical countries like India. The dust gets accumulated on the front surface of the module and blocks the incident light from the sun. It reduces the power generation capacity of the module. The power output reduces as much as by 50% if the module is not cleaned for a month. In order to regularly clean the dust, an automatic cleaning system has been designed, which senses the dust on the solar panel and also cleans the module automatically. In terms of daily energy generation, the presented automatic cleaning scheme provides about 30% more energy output when compared to the dust accumulated PV module.
2	ME	Prof. Ajith K	4VP20ME002 4VP20ME003 4VP20ME017	DESIGN & FABRICATION OF VERTICAL ROPE CONVEYOR	Working	The vertical rope conveyor, a pivotal innovation in material handling systems, presents an efficient and adaptable solution for transporting materials in a vertical trajectory. Employing a sophisticated lifting mechanism, this conveyor system facilitates the seamless movement of various materials within industries requiring vertical transportation. This abstract offers an overview of its design, functionality, and significance within the realm of modern industrial operations. The conveyance of materials, its operational principles, technological advancements, and the potential impact on industries seeking enhanced vertical material handling capabilities are discussed. Additionally, this abstract touches upon its advantages, potential applications across diverse sectors, and the imperative role it plays in optimizing logistical operations while ensuring safety and

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					reliability.
3	ME	Prof. Raghavendra Prasad S A	4VP20ME001 4VP20ME007 4VP20ME008 4VP20ME009	DEVELOPMENT & ANALYSIS OF PORTABLE ELECTRIC MINI TILLER	Working & Analysis <p>Agriculture has always been an important aspect of the human ecology. It is an important part of human life as it feeds us and thereby it runs the ecosystem. It is an extremely important section for living beings. Bust modern farming techniques are heavy-coughed and very intensive. In Indian Agriculture, generally, tractors or cultivator machines are commonly used for ploughing. Farm tilling is one of the most labour-intensive agricultural procedures. A low-cost portable battery-powered electric mini tiller machine is manufactured as a one-stop contemporary solution to improve traditional farming practices by reducing labour at a very cheap cost using a motorized tilling mechanism. An electric tiller can dig the soil using speed speed-rotating motor that has spikes. The motor is rotating with the help of a rechargeable battery which is mounted on the machine frame. A handle with controller switches helps the farmer to start and stop the motor as required. The rear supporting wheel helps the machine to counterbalance the weight. The cutter wheel rotates at high speed and penetrates the soil. A rechargeable battery and motor system make this machine cheaper as compared to IC engine-driven machines.</p>
4	ME	Prof. Harish S R	4VP21ME401 4VP21ME402 4VP21ME405 4VP21ME411	FABRICATION OF ARECA AND BAMBOO TRUNK SPLITTING MACHINE	Working <p>The growing demand for areca and bamboo products in various industries necessitates advancements in processing technologies to enhance efficiency and sustainability. This abstract introduces an innovative Areca and Bamboo Trunk Splitting Machine designed to streamline the process of splitting areca and bamboo trunks efficiently and effectively. The machine incorporates automated features to optimize the splitting process, minimizing manual labour and maximizing</p>

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					output. Its design is tailored to the unique characteristics of areca and bamboo trunks, ensuring precision and minimal waste during the splitting operation. The use of this machine promises to significantly increase productivity, making it a valuable asset for industries relying on areca and bamboo materials. The Areca and Bamboo Trunk Splitting Machine represents a technological advancement in the processing of areca palm and bamboo. Its innovative design enhances productivity, efficiency, ensures safety, and contributes to sustainable practices in industries relying on these natural materials. This development marks a significant step towards optimizing resource utilization in a responsible and efficient manner.
5	ME	Dr. Manujesh B J	4VP20ME011 4VP20ME014 4VP20ME010 4VP20ME019	FABRICATION OF FERTILIZER MIXING AND DISPENSING MACHINE	Working Farming is often associated with hard physical labour, long hours, and uncertain income, which may deter younger generations who seek more stable and less physically demanding career paths. Also, rapid urbanization and changing lifestyles have led to disconnect between younger generations and rural life. Many young people are drawn to urban areas for education, employment opportunities, social activities, and access to modern amenities, which may lead them to pursue careers outside of agriculture. On field factors concerned, labour scarcity has emerged as one of the foremost challenges in farming. Despite these challenges, there is growing recognition of the importance of attracting and retaining young people in agriculture to ensure the sustainability and resilience with the trend. Efforts to promote agriculture mechanization are the only options. In modern times, farmers face problems associated from manuring fertilizers, watering, pesticide spraying and



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					<p>harvesting. As common to all farming, areca plants too demand necessary minerals/compost, pesticide and skilled labors required to carry out this process on time. Problems of carrying, dispensing and commute inside the fields need to be addressed. The project aims in design and development of fertilizer mixing and dispensing machine for areca and other allied farming activities. It is a combination of a hand cart, compost blending machine and compost dispensing machine. The unit is powered by a 160 cc Honda engine. The compost is dumped inside through the feed hopper leading to mixing chamber, wherein the mixing is done thoroughly using specially designed blades. The machine also featured with quantifies dispensing technique added with sensor features. Field tests have been successfully conducted taking dry, wet and combined compost categories. The machine satisfactorily blends and dispenses the variety of compost to the plants. The project is a combination machine which will help commuting, spraying pesticide and watching prays. Few sensors like IR & Moisture help farmer to predict the moisture in the field. This cost-effective fertilizer blending and dispensing machine is much wanted machine for the areca farmers and which will redefine the areca farming in the future days.</p>	
6	ME	Dr. Deepak K B	4VP20ME012 4VP20ME015 4VP21ME408 4VP21ME413	FABRICATION OF SEMIAUTOMATIC DUAL COCONUT DE-HUSKING MACHINE	Working	<p>Coconut, scientifically known as Cocos nucifera, is a versatile and tropical fruit widely cultivated for its myriad uses. Revered for its distinct combination of refreshing water, nutrient-rich meat, and oil-rich kernel, the coconut plays a pivotal role in various cultures and industries. With a tough outer husk protecting its inner treasures, the coconut symbolizes resilience and resourcefulness. Several machines</p>



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					<p>are employed for the de-husking of coconuts, each designed to streamline and automate the traditionally labor-intensive process. Some common machines include, manual coconut de-husker, motorized coconut de-husker, industrial Coconut de-husking machine. These machines vary in terms of scale, complexity, and automation level, catering to diverse needs in coconut processing based on the scale of operations. These machines have several limitations, that are regular maintenance, required high skilled labor, high initial cost also and more time consumption.</p> <p>In this project work a semiautomatic dual coconut de-husking machine is being fabricated which will overcome these limitations. By using this machine two coconuts can be de-husked at a time. The machine will be driven by using a 0.5HP motor and the power to the de-husking tools will be provided through a reduction gear box. Approximately 10 coconuts will be de-husked by using per minute semiautomatic dual coconut de-husking machine, thus increasing productivity. The machine will be fabricated with low cost so as to make it affordable to all.</p>	
7	ME	Prof. Satheesha Kumar K	4VP20ME005 4VP20ME006 4VP20ME013 4VP21ME410	OPTIMIZATION OF CHAFF CUTTER CUM FLOUR MILL, FOR SMALL FARMERS	Working	<p>The optimization of a combined chaff cutter and flour mill machine involves enhancing efficiency and performance. This abstract focuses on refining the design, materials, and operational parameters to achieve maximum output and resource utilization. Through systematic experimentation and analysis, the study aims to identify optimal configurations, minimizing energy consumption while maximizing chaff cutting and flour milling capabilities. The results contribute to the development of a more sustainable and effective agricultural processing solution, catering to the needs of</p>



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					farmers and promoting resource efficient practices in food production. The scope of chaff cutter focuses on the chopping of agricultural wastes such as coconut leaves, areca leaves, etc., and this chopped waste can then be used to prepare vermin compost, cattle feeds, and floor stuff for cattle huts. The scope of the flour mill is to grind the grains used for daily purposes. It uses combined blades for grinding. The friction generated between the blades and casing results in grinding the grains into powder. At last, it can be stored for the daily use.
8	ME	Prof. Deepak Kumar Shetty	4VP20ME018 4VP20ME004 4VP20ME016	SOLAR POWERED AUTOMATIC LAWN TRIMMER	Working Lawn trimming is a time-consuming and labor-intensive process. The technology that is available in the present-day for lawn trimming operation is mostly the manually handled petrol engine powered cutter. These types of equipment operating under non-conventional sources of energy emit greenhouse gases and pollute the environment and are responsible for climate change. These lawn trimmers are also a source of noise pollution that adversely affects the health of the user and the surrounding people. The cost of petrol is another matter for consideration. To mitigate the problems of the conventional cutter, a solar-powered automatic grass cutter is designed. Solar energy is chosen because it is free of cost, pollution-free and renewable form of energy. Automation is done to reduce the need for labor. The design consists of a solar panel, solar charge controller, high speed DC motor and cutter blades, battery, ultrasonic sensor and microcontrollers are used for the automatic function of the machine. The paper summarizes all the design parameters, the working principle and design calculations.



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9	ME	Prof. Sudarshan M L	4VP21ME403 4VP21ME406 4VP21ME407 4VP21ME412	STUDY AND DEVELOPMENT OF AQUABOT	Working	<p>This study aims to develop a Aquabot that can efficiently collect and remove waste materials from water bodies. The project involves the design, construction, and testing of a Aquabot that can navigate through different water conditions and collect different types of debris. In recent years, the increase in environmental pollution has raised concerns about the impact of waste materials on our water bodies. Traditional river cleaning methods are often labor-intensive, time-consuming, and can be dangerous for human workers. To address this issue, the development of Aquabot has emerged as a promising solution. This study aims to contribute to this area of research by developing a Aquabot that is efficient, effective, and sustainable. The proposed prototype is designed to operate autonomously, making it suitable for use in remote or inaccessible areas.</p> <p>This Aquabot's system includes a water propulsion mechanism, a collection mechanism, and a sensor system. The collection mechanism uses a conveyor technology to capture the debris. The prototype's efficiency in collecting debris and navigating through different water conditions is evaluated through several tests. The results of the study demonstrate the potential of using Aquabot as a sustainable solution for cleaning water bodies and reducing environmental pollution.</p>
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