



# Vivekananda College of Engineering & Technology

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PRJ-
Projects
List
15/06/2023

## ME PROJECT List of Projects: 2022-23

MECHANICAL ENGINEERING PROJECTS LIST -AY 2022-23						
SNo	Dept	Guide	USNs	Title	Status	Abstract (100 words)
1	ME	Prof. Sudarshan M L	4VP19ME012 4VP19ME015 4VP19ME021 4VP19ME029	Design and fabrications of automatic citric juice extractor	Working	In this system the main focus is on the extraction of lemon juice without the involvement of humans. It is a fully automatic system that is mainly planned for preparing Ayurveda medicines and also suitable for food and beverage industries. During traditional way of removing lemon juice the bitterness of the peel is being mixed. But in this automatic system, the bitterness of the lemon peel is not mixed. The time consumed for removing the juice in this system will be less. This system is fully hygienic as there is no human involvement. It is a compact system that can be moved easily. Here the design is made such that the crushing of the seed is not present and the collection of the juice will be in hygienic manner. The design of this system is made such that the system is very precise and compact. In this machine the lemon is being cut with the help of blade and the juice is being extracted with the help of pneumatic actuator. The IOT system is used for the automation of the machine.
2	ME	Prof. Harish S R	4VP19ME030 4VP19ME025 4VP19ME033 4VP19ME039	Design and Fabrication of Areca Trunk Splitter	Working*	The Areca palm (Areca catechu) is a tropical tree widely cultivated for its nuts, commonly known as betel nuts. After the productive life cycle of these trees or in cases where removal is necessary, the trunks can be repurposed for applications such as timber, handicrafts, and construction materials. However, manually splitting these trunks can be laborious, time-consuming, and inconsistent in terms of results. Traditional methods of splitting the areca trunk involve the use of axes or machetes, which can be time-consuming and labor-intensive. To address this issue, areca trunk splitter machines have been



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						<p>developed to automate the splitting process. The use of areca trunk splitter machines has several benefits over traditional methods. First, the machine saves time and labor by automating the splitting process, allowing farmers to process more trunks in less time. Second, the machine ensures consistent splitting, which results in uniform pieces that are easier to process. Third, the machine is safer to use than traditional methods, reducing the risk of injury.</p>
3	ME	Dr. Deepak K B	4VP20ME401 4VP20ME402 4VP20ME403 4VP20ME407	Rubber Latex Suction for Rubber Tree	Working	<p>The majority of the rubber trees are in tropical areas like Southeast Asia, Amazon region of South America. In the recent years labour scarcity has emerged as one of the foremost challenges in farming. Rubber plantation has also been affected by this issue. Traditionally, the rubber latex collected in a cup, and is manually removed by labors by bare hands. Thus this process is difficult and time consuming as the rubber plantation is in difficult terrain it will take more time for the collecting process. Due to such drawbacks the tapping of rubber tree is limited and farmers are not able to reach their full potential, hence profit margin is reduced. This project is mainly designed to help farmers to reduce time consumption of rubber latex collecting process and also for shortage of labors availability. This innovation leads to profit for farmers and also decreases overall process time. The machine is designed in such a way that it can be carried like backpack or trolley depending upon the plantation, and is compact and portable as it uses DC motor to generate suction and it is powered from a 12 Volts battery.</p>
4	ME	Prof. Naveen S P	4VP19ME020 4VP19ME027	Recharging Unit for Electric Vehicle	Working	<p>In recent years, labour scarcity has emerged as one of the foremost challenges in farming. One of the crop that has been most affected by this is the arecanut. It is important to provide a plant with necessary minerals/compost and labourers are required to carry out this process as the weight of the compost</p>

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			4VP19ME028 4VP19ME038			is heavy and the arecanut plots are usually large. This project 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 poured inside the mixing chamber and mixing is done inside, blending of compost is carried out. The cart is portable and dispensing is achieved with the help of this setup.
5	ME	Prof. Satheesha Kumar K	4VP19ME005 4VP19ME014 4VP20ME405 4VP20ME408	Design and Development of Low effort run cycle	Working	This project deals with the design and development of the Low-Effort Run Cycle. Nowadays due to societal and personal burdens, we don't have time for Physical activity. Physical activity including exercise, walking, running, etc. The treadmills are used as exercise machines for running or walking in one place, we are utilizing the same principle with some modifications for traveling a shorter distance. A new type of bicycle is introduced which has an advantageous impact on human life which is called the "Low Effort Run Cycle". This cycle can be helpful for people to travel short distances as well as used for exercise. Using this Running Bicycle, allotting a separate time for their exercise is not needed. Along with exercise, we can reduce effort by half of the normal cycle. By combining the cycle with treadmill concept the cost can be reduced and benefits are increased.
6	ME	Prof. Naveena Krishna PV	4VP19ME003 4VP19ME011 4VP19ME013 4VP19ME016	Design and fabrication of Arecanut De-husking machine	Working	As we know Areca is one of the major crop of India. It is not just a crop which is used for gutka, they are also used for medical purposes in Indian culture they have major role. The major problem in arecanut processing is lack of labours. After drying the arecanut for 40 days, it can be dehusked and it is marketed. The dehusking of arecanut is done manually and because of lack in labour problem, there is a need for a dehusking machine. An average worker can dehusk about 3 kg per hour. So there is a scope to develop a dehusking machine. In market, there are number of machine. But still there is no



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					<p>machine with 100% working efficiency. So there is a scope for a machine with lot more efficiency.</p> <p>A machine is developed, using shafts with teeth rather than using blades and rubber tyres. This will not damage the areca while peeling. This also has advantage over rubber tyres because there may a chance of smaller size areca getting out of the machine without getting dehusked. We have used shaft which has tapered teeth and they are welded in an inclined position which helps in dehusking areca of all sizes.</p>
7	ME Prof. Ajith K	4VP19ME032 4VP19ME044 4VP19ME045	Design and Fabrication of Two Wheel Driven Forklift	Working*	<p>In today's life, there is a wide variety of forklifts, from the large heavy loading truck to the one that works among narrow aisles. Forklifts have become one of the basic transportation tools we use in our lives. With all the forklifts in existence, we find that there are some improvements that can be made to bring the forklift to a better performance.</p> <p>The main aim of our project is to design and fabricate forklift which will lift the load and then it will transfer the load from one place to another place. Our project is intended to work with electrical power to bring out environmental friendly with ease of controlling. The system will utilize motor drive for lifting and transportation of loads in industry warehouse.</p>
8	ME Dr. Manujesh B J	4VP19ME001 4VP19ME035 4VP19ME036 4VP19ME037	Manually operated multipurpose power trolley	Working	<p>As we know most of India's population depends on Agriculture. And Farmer is the backbone of our country. In our area areca nut, coconut is the major crop. One of the major problems associated with agriculture is the lack of labors. Due to this many young farmers are will quit farming and migrate to cities. During harvesting of areca nut, areca nut is to be transported from plantation to the place of storage. Since lack of labors, farmers will be facing difficulties. Many mini trolleys are available in market, but those trolleys will no satisfy required condition and cannot be 100 % efficient. In order to</p>



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					<p>solve these problems, we have developed a design and fabrication of multi-purpose power trolley. We can find some trolley in market where it has some of the disadvantages. In this we have used two-wheeler engine which has more power compared to other trolley. We have designed it in a condition so that it can easily move in the middle of plantation. It also has gear system, by which it can get more power. It also has good mileage it will give up to 35 km / litter of petrol. We introducing new tilting mechanism in this trolley it is reduce the man power and good benefit of farmer. It can travel in muddy, intricate places. This trolley is mainly focused on low cost, easy to operate. This trolley is design for different application like agriculture, Transport, Industry.</p>
9	ME	Dr. Deepak K B	<p>4VP19ME006 4VP19ME024 4VP19ME034 4VP19ME040</p>	<p>Design and Fabrication of Collecting and Bagging Machine for Dried Arecanut Through Suction</p>	<p>Working*</p> <p>Agriculture is now one of the most important sectors in the Indian economy. Arecanut cultivation is one of the major livelihoods of farmers of Kerala and Karnataka. Labour problems in every sector is leading to mechanization of processes.</p> <p>Agricultural sector is also facing such problem due to which most of the farmers tend to give up the practice. Arecanut cultivation is a long process involving harvesting, separating the fruits from bunches, moving the areca nut to ground, drying, de-husking, separating, bagging. Several machines are being developed to help farmers to aid the aforementioned processes.</p> <p>Arecanut collecting and bagging machine is a new one among them. The machine is intended to collect the dried arecanuts from ground directly through the pipes to gunny bags through suction action. The machine can be operated by one person so that it becomes less labour intensive.</p>
10	ME	Prof. Naveena Krishna P V	4VP19ME004	Design and Fabrication of Soil Ploughing Machine	<p>Working</p> <p>In present investigation, an aim to study of design and Fabrication of soil ploughing in the field of agriculture, India is</p>



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			4VP19ME026 4VP19ME031 4VP20ME406			<p>basically an agricultural country. Agriculture plays a vital role in the Indian economy. Over 70 percent of the rural households depend on agriculture as their principal means of livelihood. Due to high-cost effect and conventional agricultural equipment used in agriculture which leads to decrease in the production and may fail to earn wealth.</p> <p>To overcome this problem modern agricultural methods and equipment's has been used in the field of agriculture. So, in present study we aim to design cost effective ploughing machine. They can do the same type of work that larger machines do, they just don't till as much at a time.</p> <p>The prototype we made helps in preparing field by breaking the soil bed with less human effort. Since, it has a single wheel which helps in making work easier for sowing of crops and ploughing the land. Also, its smaller width provides sufficient weeding operation between plants.</p>
11	ME	Prof. Deepak Kumar Shetty	4VP19ME009 4VP20ME404 4VP20ME409 4VP19ME008	Design and Fabrication of Arecanut Tree Climber and Sprayer	Working*	<p>The people in rural areas of Karnataka mainly depend on agriculture for their livelihood. The main crops grown are areca nut and coconut. For harvesting the nuts, for spraying and applying insecticides on the crown, skilled laborer have to climb manually up the tree. Such a process looks easy. In reality it is a laborious and dangerous task. It requires skill to climb an arecanut tree. Skilled areca nut tree climbers have become scarce and farmers are finding it difficult to harvest the nuts.</p> <p>To avoid the laborers climbing the tree and spray the fungicide solution, here it is proposed to address problem by developing a climber that can semi-autonomously spray fungicide solution on areca nut tree. A quad copter drone with payload capacity of 8kg is developed with Pixhawk Flight Controller in it. Controller takes responsibility for drone actions and drone behaviors. As a complete implemented drone system updated</p>



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					with aurdupilot has suitable conditions in order to meet circular trajectory tracing feature in the controller itself. This project solves all the problems regarding the climbing and spraying and harvesting of arecanut tree, thus developing a safer, reliable and an economical system. A prototype of the above model was made and was tested. The test was successful and the performance was satisfactory.
12	ME	Dr. Manujesh B J	4VP19ME007 4VP19ME023 4VP19ME043 4VP20ME400	Conversion of Old vehicles into E-bikes/moped/Scooter	Working The challenge that is to build off of an electric vehicle is a type of alternative fuel vehicle that uses electric motors and motor controllers instead of an internal combustion engine. Power is derived from battery-packs rather than a carbon based fuel. This saves not only money, but has much smaller impact on the environment. It also offers a number of advantageous over conventional internal combustion engines, especially In terms of lower local emissions, higher energy efficiency. There are certain barriers for the rapid adoption of electric vehicles, including the limitations of battery technology, high purchase costs and the lack of recharging infrastructure. In our project we are going to fabricate an electric vehicle using lithium ion battery and with BLDC hub motor. We the students of Vivekananda College of Engineering and Technology have done a few research and related calculation for the conversion of scrap vehicles to E-Vehicles. The significance of our project is to build a better model which can be useful, harmless and eco-friendly. The results are more useful than the present IC engines so they can be used in different applications. There is a huge demand for the Electric vehicles in the near future and the trend has already started. So we have converted the old IC engine vehicle from scrap to an Electric vehicle where the re use of the scrap is also achieved.



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13	ME	Prof. Naveen S P	4VP19ME002 4VP19ME018 4VP19ME022 4VP19ME042	Fabrication of Fertilizer Mixing and Dispensing Machine	Working*	One of the main fact of recharging an electric vehicle in a rural area is the limited availability of charging infrastructure. Unlike urban areas, where electric vehicle charging stations are becoming increasingly common, rural areas often have fewer charging options. This can make it difficult for electric vehicle owners to plan longer trips or to rely on their vehicle for daily commuting without the fear of running out of charge. Additionally, the distance between charging stations in rural areas can be much greater than in urban areas. This means that electric vehicle owners may have to travel longer distances to find a charging station, which can lead to range anxiety and limit the practicality of owning an electric vehicle in rural areas. This project contains a 4stroke engine which rotates at 3600 rpm and that engine is connected into the alternator through a shaft this alternator converts the mechanical power of the engine into electrical power, which is used to charge the battery of the electric vehicle, this recharging unit produces 220volt, it runs 2 hours per liter. Hence by using this unite the limitation of charging infrastructure at rural area can be reduced.
14	ME	Dr. Manujesh B J	4VP19ME010 4VP19ME019 4VP19ME046	Design and fabrication of poultry litter Raking and Cleaning Machine	Working	Poultry industries are one of the profitable agro-industries that can effectively tackle the growth of the economic sector. We discuss the development process of a new machine for poultry farms. The electric poultry litter raking machine is conventional method of poultry farming, as it reduces human effort, at a very low cost using motorized tilling mechanism. The poultry raking helps to reduce the time and cost involved in raking and using a new portable design thereby increasing the productivity and efficiency in farming. The machine is driven by an electric motor which uses belt to





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					drive. Poultry litter is one among the promising source of biomass, which may be used as natural fertilizer or may be used for biogas generation. The objective of this is to investigate the performance characteristics of the motor driven litter raking machine.
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