List of Projects: 2019-20

MECHANICAL ENGINEERING PROJECTS LIST -AY 2019-20						
SNo	**Dept**	**Guide**	**USNs**	**Title**	**Status**	**Abstract (100 words)**
1	ME	Dr. Deepak K B	4VP16ME005 4VP16ME003 4VP16ME013 4VP17ME411	DESIGN AND FABRICATION OF PORTABLE ARECANUT DEHUSKING MACHINE	Working	Machine makes life easier, so humans are always keen to develop a new machine which makes life easier. In wake of globalization, a lot of innovations have been made towards the agricultural crops grown in rural areas. More than 50,000 innovations are scouted across 300 districts of India, out of which a large part of innovations is towards arecanut, honey and coconut crops. In a district like, Dakshina Kannada (D.K) arecanut is one of the cash crops grown and many farmers are dependent on it for their livelihood. The arecanut crop consists of inner fruit and outer husk. Separation of inner fruit from the outer husk is called dehusking and is usually done manually by labourers. But due to unavailability as well as high wage expectations of the workers, it has become a tedious job for the agriculturist to get dehusking done. So, to address the above problem, it is necessary to innovate the most economical as well as efficient machine, which is affordable. Thus, in this project work, a machine for peeling of husk from the dried arecanut has been fabricated. The machine consists of a tyre covered with a casing. A small gap between the tyre and the casing is provided through which arecanut passes and due to friction between the tyre and casing the dry arecanut gets dehusked. The machine is run by a 1 HP motor. The arecanut and the husk after separation fall on the splined shaft provided at the bottom. The husk gets drawn downwards by it and the arecanut rolls down the spline shaft and gets collected in a bag. The capacity of the machine is about 20-25 Kg and cost of the machine is affordable to all. Any unskilled person can

						operate this machine. By using this arecanut dehusking machine time and labour cost can be saved to a great extent
2	ME	Dr. Deepak K B	4VP16ME022 4VP16ME023 4VP16ME033 4VP16ME038	DESIGN AND FABRICATION OF ENGINE DRIVEN MOBILE DIGGING MACHINE FOR AGRICULTURE	Working	Agriculture in India has a significant history. In almost all agricultural plantation, digging holes or plantation pits are very necessary in the initial stage. This work is done manually which is highly labor intensive and time consuming. The main aim of this project is to design and fabricate soil digging machine, which can be useful in various fields of application such as agriculture and construction. The main intention here is to reduce human effort. It can be handled, managed and operated by a single person. It is also much safer and comfortable in handling. The size of the pit can be altered by changing the auger bit size. This machine can be used not only for plantation but also for normal gardening and household purposes such as post holes, fencing etc. It can be handled, managed and operated by a single person. The auger bit size can be selected as per the required pit size. The arrangements are made in order to give safety to operator.
3	ME	Mr. Satheesha Kumar K	4VP15ME030 4VP15ME073 4VP16ME002 4VP16ME027	DESIGN AND FABRICATION OF VERTICAL AXIS WIND TURBINE FOR DOMESTIC AND HIGHWAY LIGHTING	Working	In this world of depleting resources, renewable energy plays an important role. The role of renewable energy in tomorrow's world is of great significance for global environmental stability. Wind, sun and flowing or stored hydro are considered the most common renewable energy sources for power generation. Wind energy outshines all other renewable energy resources due to the recent technological improvements. Electrical energy generation from wind power has increased rapidly and due to the increased interest, many studies on efficient wind turbine design have been proposed. This unique design allows using

						Savonius as a method of self-starting the wind turbine which the Darrieus cannot achieve on its own. Rooftops and highways can provide a considerable amount of wind to drive a turbine. This energy is unused. Extensive research on the wind patterns is required to determine the average velocity of the wind and thus using all the collected data, the wind turbine has to be designed. In the present study, an attempt is made to design and fabricate a vertical axis wind turbine that can utilize low-velocity wind for the useful generation of electricity sufficient for highway lighting and domestic purpose. Based on the result, the vertical axis wind turbine suitable for the small capacity power source for a room.
4	ME	Mr. Sunil B Lakkundi	4VP16ME015 4VP16ME043 4VP16ME004 4VP16ME070	FABRICATION OF COCONUT DEHUSKING MACHINE	Working	India being the 2nd largest producer of coconut, lack in technology of processing industry. Till date there were many techniques involved to peel the coconut. The traditional method used in India, for the separation of copra and shell from partiallydried split coconuts, is labor intensive. To overcome this problem, a power operated coconut De-husking machine was designed and developed. Today there are many methods used for de-husking and De-husking of coconut. These methods are widely used for removing of the coconut husk but these methods have many problems and limitations while operating these machines. These problems affect the production rate of de-husking the coconut. To overcome the limitations and problems occurring in the present machine there is need of the method to be less harmful to the user. To overcome these limitations, and to provide safety for the operator, a new design of de husking machine is introduced and fabricated. This de husker comprises usage of two horizontal spikes with series of sharp

						tools which would shear the husk from coconut when rolling against each other. Shear force is required for de husking of mature green coconut and dry brown coconut. The loading and unloading is done manually. All materials used in the fabrication of this machine are of standard specification and locally sourced. This machine eliminates the problems and limitations to a greater extent. In this way the production rate increases compared to the conventional Coconut Dehusking machine
5	ME	Mr. Ashwith Kumar M. S.	4VP16ME026 4VP16ME007 4VP16ME030 4VP16ME037	DEVELOPMENT OF MULTIPURPOSE SEED COLLECTOR	Working	This project aims in collecting areca nut from the field. Since it works by using vacuum this machine can also be used in collection of seed pepper, rice, cashews etc. which are kept for sun drying. By using this machine number of workers in the field are reduced and hence the labour cost is reduced. The machine requires petrol as fuel and oil for lubrication. Compared to number of labour and labour cost, the cost of fuel and lubricant it is not a big issue to the users. It is concluded that the weight and density of the collecting material matters a lot. The less dense and light weight materials are sucked in quickly compared to other. And also more vacuum is needed in collecting of denser materials. Thus finally we conclude that **1.** The optimal working range of the machine is between 2900 to 3200rpm and the suction velocity will vary between 21m/s to 23m/s. **2**. It will take 40 to 55 sec to collect 1Kg of areca. The designed capacity of the collecting chamber is 10Kg and it will take 9 to 10 min to fill the collecting chamber. **3.** The machine will run up to an average of 2hrs to 2.5hrs per litre of fuel.
6	ME	Mr. Bhaskar Kulkarni	4VP16ME020	DESIGN & FABRICATION	Working	As an innovation more number of plastic products are being

			4VP16ME034 4VP16ME040 4VP16ME041	OF PLASTIC SQUEEZING MACHINE		used in the development of light-weight, durable and cost effective also feasible alternative in every field and it causes serious environmental problems. Although they are not intrinsically dangerous, they take up a huge amount of space in landfills and they are made from non-renewable resources, namely fossil fuels. For this reasons it is important that, where ever possible plastics are need to be recycled. The usage of plastic has increased now a day in many industries like automobile, packaging, medical, etc. The reason behind this is that the things made by plastic are quiet easier to manufacture, handle and reliable to use. So the plastic goods manufacturing industries are striving hard to produce good quality products at large scale and cheaper cost. The hydraulically operated machines solve the problem, but they are too costlier for small scale and medium scale industries. This project deals with design and fabrication of plastic squeezing machine. A manually operated machine with a heating arrangement and molding chamber. This plastic squeezing machine includes assembly of mechanical components like hopper, mold, frame, electrical heating-coil, threaded shaft, driving wheel, the shape is given by the mold and they are fused together by surface heating method.
7	ME	Mr. Sunil B Lakkundi	4VP16ME001 4VP16ME006 4VP16ME021 4VP16ME035	DESIGN AND FABRICATION OF PORTABLE WEIGHT TROLLEY WITH IoT	Working	Today transportation is the biggest challenge due to the speed growing society there for the technology should match the latest market need, rope way system of transportation is not a new technology but it is one of the better and safe transportation, In old days this transportation used to transport peoples and goods between the hills and mountains because lack of path ways, making of path ways or roads were very difficult because of unconditional places which may leads to damage of death therefore ropeway

						transportation is very safety in unconditional places and transportation must be simple otherwise trained peoples are required which leads to the high cost operation. Portable weight trolley gives proper safety with in the time interval which also consist of work internet of things comes with industry 4.O which helps the operation with latest technology which fulfill the market requirement problem and insertion and transportation of the machine is manageable which gives the proper cost effectiveness. Design of portable weight trolley with IOT helps the transportation in very simple and effective manner. Controlling the power supply to the motor using android application where the remotely control of induction motor is achieved. Android mobile acts as a transmitter. Signals received by a Blue-tooth receiver interfaced to AVR microcontroller of 8051 family.
8	ME	Mr. Ajith K	4VP16ME047 4VP16ME062 4VP16ME067 4VP16ME072	DESIGN AND FABRICATION OF RUBBER TAPPING MACHINE	Working	Rubber Tree or Hevae Brasiliensis is a plantation crop grown mainly for the milky white liquid called latex present in its bark. The process of extracting the latex by making a controlled downward half spiral incision in the bark is called Tapping and is a highly skilloriented task. The plantation will usually have more than 500 trees which should be tapped only at the specified time of the day for maximum latex yield. But the present-day rubber cultivators are facing the shortage of skilled tappers who could complete this task. Tapping by the available unskilled tappers may lead to damaging of the trees. The rubber tapping machine designed here is an approach to help the cultivators overcome the problem of skilled labor shortage. In our project, we use a motor to move the cutting tool along the guideway. The guideway and the inclination of the blade helps to maintain the required depth and angle of the incision. The machine is

						designed in such a way that even an unskilled labor with basic knowledge of the operation can perform the operation at a faster rate, with more yield and without damaging the tree.
9	ME	Mr. Sudarshan M L	4VP16ME077 4VP16ME078 4VP16ME085 4VP16ME086	ADVANCED APPLICATION OF IOT BASED SENSORS FOR WASTE PLASTIC RECYCLING AND PRODUCT DEVELOPMENT	Working	Plastics are lightweight, inexpensive and durable materials, which can readily be moulded into a variety of products that find use in a wide range of applications. Recycling is one of the most important actions currently available to reduce the impacts of their usage and disposal and also represents one of the most dynamic areas in the plastics industry today. In a world of growing population and increasing prosperity, the demand for new hightechnology products is increasing together with the demand for raw materials. To be able to deal with the demand for new raw materials and the increasing amount of waste, the recycling industry needs to prepare itself to cope with these changes. If the waste can become the new raw materials, then the recycling industry has a bright future. The implementation of new ways to recycle products can be the solution to succeeding in this challenge. The objective of this project is to improve and apply automation in the recycling industry. More specifically, the objective is to identify problems and solutions in the recycling of plastics and to build a system, designed with standardized processes and is arranged in a flexible way to be able to manage with current industrial requirements.
10	ME	Mr. Kiran Kumar N A	4VP16ME089 4VP16ME065 4VP15ME079 4VP16ME087	DESIGN AND FABRICATION OF WHEELCHAIR CUM STRETCHER	Working	In India the number of disabled individuals is increasing every year. Mobility aids are useful for patients for transportation and a replacement for walking especially in indoor and outdoor environment. Transferring the patients from wheelchair to stretcher or to the medical bed is always

						an issue for the attendant or helper. There is a need for a wheelchair cum stretcher to facilitate the injured & disabled patient's mobility and to provide a novel medical equipment for use in the Indian hospitals. Here we are developing a system which is capable of shifting various positions (Chair, Semi-Chair and Stretcher) manually. Mobility aids are used for carrying the patients. Wheelchairs and stretchers are the most generally used mobility aids for the movement of patients. Transferring the patients from wheelchair to stretcher or to the medical bed or vice versa is always an issue for the attendant or nurse. There is a wide range of wheelchairs available today driven by needs and desire of man. Hence we suggest a design of wheelchair cum stretcher which is a boon to the medical field. It would be maintained and operated easily for attendant according to the comfort of the patient.
11	ME	Mr. Rakshith Kumar Shetty	4VP17ME407 4VP16ME016 4VP16ME011 4VP16ME076	DESIGN AND FABRICATION OF RAW COCONUT SCRAPING MACHINE WITH VEGETABLE CUTTER	Working	We all know that coconut is one of the major crop India and all parts of the world. It has the several type since tender coconut raw coconut and dry coconut and we considered the processing of raw coconut. In Indian style of cooking raw coconut is highly used but the processing time of the scraping of raw coconut takes more time and with less concern of safety. So there is a need of machine which enhances better safety and saves processing time. Raw coconut is also a wet coconut which is not only used for cooking but also used in sweet industries In another side processing of different vegetables that is cutting, slicing and scraping is considered very important in any of food department. So in order to save the time and ensure better safety, there is a demand in vegetable processing too. A machine is developed by combining, these two that is

						scraping of raw coconut and vegetable processing. A 1HP motor 3 phase is used with a rpm of 1440. The power transmissions are through belt and pulley. At a time, all the shaft run at same torque with same rpm. The man can scrap raw coconut at a time with 4 tools and backside of machine vegetable is processed by using different tools. These processed vegetables and raw coconut collected in tray.
12	ME	Mr. Sudarshan M L	4VP16ME077 4VP16ME078 4VP16ME085 4VP16ME086	ADVANCED APPLICATION OF IOT BASED SENSORS FOR WASTE PLASTIC RECYCLING AND PRODUCT DEVELOPMENT	Working	Plastics are lightweight, inexpensive and durable materials, which can readily be moulded into a variety of products that find use in a wide range of applications. Recycling is one of the most important actions currently available to reduce the impacts of their usage and disposal and also represents one of the most dynamic areas in the plastics industry today. In a world of growing population and increasing prosperity, the demand for new hightechnology products is increasing together with the demand for raw materials. To be able to deal with the demand for new raw materials and the increasing amount of waste, the recycling industry needs to prepare itself to cope with these changes. If the waste can become the new raw materials, then the recycling industry has a bright future. The implementation of new ways to recycle products can be the solution to succeeding in this challenge. The objective of this project is to improve and apply automation in the recycling industry. More specifically, the objective is to identify problems and solutions in the recycling of plastics and to build a system, designed with standardized processes and is arranged in a flexible way to be able to manage with current industrial requirements.
13	ME	Mr. Kiran Kumar N A	4VP16ME089	DESIGN AND	Working	In India the number of disabled individuals is increasing

			4VP16ME065 4VP15ME079 4VP16ME087	FABRICATION OF WHEELCHAIR CUM STRETCHER		every year. Mobility aids are useful for patients for transportation and a replacement for walking especially in indoor and outdoor environment. Transferring the patients from wheelchair to stretcher or to the medical bed is always an issue for the attendant or helper. There is a need for a wheelchair cum stretcher to facilitate the injured & disabled patient's mobility and to provide a novel medical equipment for use in the Indian hospitals. Here we are developing a system which is capable of shifting various positions (Chair, Semi-Chair and Stretcher) manually. Mobility aids are used for carrying the patients. Wheelchairs and stretchers are the most generally used mobility aids for the movement of patients. Transferring the patients from wheelchair to stretcher or to the medical bed or vice versa is always an issue for the attendant or nurse. There is a wide range of wheelchairs available today driven by needs and desire of man. Hence we suggest a design of wheelchair cum stretcher which is a boon to the medical field. It would be maintained and operated easily for attendant according to the comfort of the patient.
14	ME	Mr. Rakshith Kumar Shetty	4VP17ME407 4VP16ME016 4VP16ME011 4VP16ME076	DESIGN AND FABRICATION OF RAW COCONUT SCRAPING MACHINE WITH VEGETABLE CUTTER	Working	We all know that coconut is one of the major crop India and all parts of the world. It has the several type since tender coconut raw coconut and dry coconut and we considered the processing of raw coconut. In Indian style of cooking raw coconut is highly used but the processing time of the scraping of raw coconut takes more time and with less concern of safety. So there is a need of machine which enhances better safety and saves processing time. Raw coconut is also a wet coconut which is not only used for cooking but also used in sweet industries In another side processing of different vegetables that is cutting, slicing and

						scraping is considered very important in any of food department. So in order to save the time and ensure better safety, there is a demand in vegetable processing too. A machine is developed by combining, these two that is scraping of raw coconut and vegetable processing. A 1HP motor 3 phase is used with an rpm of 1440. The power transmissions are through belt and pulley. At a time, all the shaft run at same torque with same rpm. The man can scrap raw coconut at a time with 4 tools and backside of machine vegetable is processed by using different tools. These processed vegetables and raw coconut collected in tray.
15	ME	Mr. Sunil B Lakkundi	4VP16ME017 4VP16ME029 4VP16ME032 4VP16ME036	DESIGN AND FABRICATION OF MULTISTAGE FLOWING WATER TURBINE	Working	In this world of depleting resources, renewable energy plays an important role. The role of renewable energy in tomorrow's world is of great significance for the global environmental stability. Sun, wind and flowing or stored hydro are considered the most common renewable energy sources for power generation. Out of these three renewable energy resources, the advantage of hydro energy is that it can continuously supply energy and can serve as a base power. Hydro energy is one of the major renewable energy sources. The water wheels were developed in the early ages for the power production, due to their large diameter and small contact area they failed in utilizing water sources effectively, therefore water wheels were less efficient. Multistage type turbine is designed to extract energy from flowing water. The kinetic energy available in the flowing water is made use to create the impulse action on turbine blades. To extract more energy, turbine blades will be in contact with the flowing water for more time, the mechanical energy is converted into electrical energy. Test conducted for a channel of water with velocity of 1 m/s gives an output of 500 watt.

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16	ME	Mr. Puneeth N	4VP16ME042 4VP17ME400 4VP17ME404 4VP17ME406	ANALYSIS OF PHYSICAL AND MECHANICAL PROPERTIES OF JUTE FIBERS PARTICLE REINFORCED POLYMER COMPOSITES	Analysis	Nowadays, scientist and engineers working in the field of materials are too concerned with sustainability issues and environmental protection. Due to environmental friendly, bio degradability and sustainability, natural fiber composites are preferred as compared to conventional synthetic fiber based composites. An Epoxy piece and Jute fiber-epoxy composite is prepared using hand layup technique. For this purpose, an open type mould made of mild steel plate has been used. It is revealed that the jute epoxy composite exhibited better tensile and compressive strength. Bundle strength of fibers decreases with increase in number of fibers in a Bundle. Tensile and compressive strength increases with Jute fiber reinforcement.
17	ME	Mr. Naveen S P	4VP16ME008 4VP16ME009 4VP16ME031 4VP17ME401	DESIGN AND FABRICATION OF RETRACTABLE STRETCHER	Working	Most hospitals use the basic stretchers which are made of thick sheet metal and bolted upwith thick screws. This stretcher is uncomfortable just as it sounds. On the bright side, multispecialty hospitals use a good and comfortable stretcher, but everyone cannot afford these hospitals. So, in order to increase the comfort of the patient, the maneuvering capability of the stretcher, this project is designed and fabricated as stretcher so as to reduce such problems. This can be used in almost all the hospitals. The comfort of the patient is a priority when he is under hospital's care, to achieve this we can attach a regular sized bed onto it. The height of the stretcher can be adjusted according with the help of pneumatic cylinder attached to it. There is a compartment to fit the oxygen cylinder to fit in. Drip stands can also be fitted onto the stretcher frame.
18	ME	Mr. Sudarshan M L	4VP16ME081 4VP16ME073	STUDY, ANALYSIS AND COMPARISON STUDY OF	Working	Composite materials have played an important role throughout human history,from housing early civilizations to

			4VP16ME051 4VP16ME019	THERMO-MECHANICAL PROPERTIES OF ASH FILLED BANANA STEM FIBER REINFORCED COMPOSITES		enabling future innovations. Composites offer many benefits; the key among them are corrosion resistance, design flexibility,durability, light weight, and strength. Composites have permeated our everyday lives such as products that are used in constructions, medical applications, oil and gas, transportation, sports, aerospace, and many more. Some applications, such as rocket ships, probably would not get off the ground without composite materials. This chapter addresses the advantages of fibre composite materials as well as fundamental effects, product development, and applications of fibre composites, including material chemistry, designing, manufacturing, properties, and utilisation of the materials in various applications. The present study describes the development and characterization of banana stem fiber reinforced composites. Here epoxy resin L-12 and hardener K-6 using ash as filler in different composition of 0%, 5%, 10%, 15% and 20% are used to develop light weight composite. The significance of using ash as filler material in order to increase mechanical as well as thermal stability has studied by many, in our project we check the improvement of mechanical as well as thermal properties when ash is added as filler with banana stem fiber reinforced with epoxy. Ash filled polymer composites possess attractive mechanical, thermal, electrical properties, better dimensional stability and are cost effective. It is evident from the tests that the mechanical and thermal properties are improved by addition of filler material upto certain limit, the specimen containing 10% ash as filler for banana stem fiber reinforced with epoxy exhibits better dynamic rigidity and thermal stability.

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19	ME	Mr. Naveenakrishna P V	4VP16ME088 4VP16ME054 4VP16ME046 4VP17ME402	DESIGN AND FABRICATION OF COMAPCT ARECANUT DEHUSKING 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 purpose and in Indian culture they have major role. The major problem in arecanut processing is lack of labors. 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 labor problem, there is a need for a dehusking machine. An average worker can dehusk about 3 kg per hour. In market, there are number of machines. But still there is no machine with 100% working efficiency. 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. This machine is mainly focused on low cost, easily portable and easy to operate. This machine is able to dehusk about 5 kg per hour. Which is more than an average worker's capacity.
20	ME	Mr. Harish S R	4VP16ME063 4VP16ME074 4VP16ME082 4VP15ME016	FABRICATION OF ARECANUT REFRESHER AND SIZER	Working	The machine was tested using arecanuts. The obtained results were satisfactory. The main objective of removal of moisture and dust from the stored arecanuts was met during experimentation, The following results were tabulated. Input parameters: 1) Voltage : 230V 2) RPM of stirrer: 110 RPM 3) Temperature of hot air blown: 120'C 4) Weight of arecanuts filled : 25Kg Output results: 1) Output Temperature : 65'C 2) Average Time taken by a nut to pass through hot chamber : 3.5 mins 3) Temperature of exhaust gas : 85'C

21	ME	Mr. Naveenakrishna P V	4VP16ME039 4VP16ME025 4VP16ME010 4VP15ME012	COMPACT COCONUT DEHUSKING MACHINE	Working	The traditional method used in India, for the separation of copra and shell from partiallydried split coconuts, is labor intensive. To overcome this problem, a power operated coconut De-husking machine was designed and developed. Today there are many methods used for de-husking and De-husking of coconut. These methods are widely used for removing of the coconut husk but these methods have many problems and limitations while operating these machines. These problems affect the production rate of de-husking the coconut. To overcome the limitations and problems occurring in the present machine there is need of the method to be less harmful to the user. To overcome these limitations, and to provide safety for the operator, a new design of de husking machine is introduced and fabricated. This de husker comprises usage of two horizontal spikes with series of sharp tools which would shear the husk from coconut when rolling against each other. Shear force is required for de husking of mature green coconut and dry brown coconut. The loading and unloading is done manually. All materials used in the fabrication of this machine are of standard specification and locally sourced. This machine eliminates the problems and limitations to a greater extent. In this way the production rate increases compared to the conventional Coconut Dehusking machine.
22	ME	Mr. Vrijesh Rai S	4VP16ME018 4VP16ME059 4VP15ME049 4VP14ME053	DESIGN AND FABRICATION OF MUNICIPAL WASTE COLLECTION SYSTEM	Working	Today waste collection is the biggest challenge due to the lack of workers there for the system should match the latest market need, vacuum waste collection system is not a new technology but it is one of the better way of collection of waste, In old days waste collection is done by manually, making this kind of system were very difficult because of unavailability of suitable engines. Municipal solid waste

						represents a major crisis for rural communities because of the lack of awareness of the effects of people dumping their waste in the water canals causing water pollution as well as visual pollution, is a big challenge. Waste collection is a part of the process of waste management. It is the transfer of solid waste from the point of use and disposal to the point of treatment or landfill. The Occupational risks and injury rate are more among workers involved in waste collection compared to other industrial occupations. rather than looking solid waste as waste, it should be looked as Source of energy. If managed properly, we can see that, biodegradable waste gives, biodiesel, Bio CNC, Fuel ethanol and liquid manure. To collect the wastes from different areas this system is designed. Design of vacuum waste collection system helps the collection of waste in very simple and effective manner.
23	ME	Mr. Sunil L J	4VP15ME087 4VP14ME058 4VP15ME088 4VP15ME009	ABSORPTION OF SOLAR ENERGY BY USING WATER LENS	Working	India is near to the equator, Country has large amount of solar energy with good intensity is available throughout the year. The sun's energy is intensely felt across India, due to the country's proximity to the equator. Solar Concentrator System can concentrate large amount of sunlight into a smaller one by applying lenses or curved and flat reflective mirror. The energy density from the sun is low for thermal utilization, light concentrator such Plano convex lens, Fresnel lens are needed. Approach is to develop a simple geometry curvature liquid lens concentrator fill with high refractive index liquid. A water lens can reduce the cost with trade off of concentration factor to some extent .It is easily prepared and operated with low cost material available in market. The effect of concentration ratio and diameter of focus area is studied and also is find significance of focus

						area .The concentrator creates positive effect for increasing the intensity of sun light. The circular plano-convex lens that constitute the refractive power of lens. Refractive index of the liquid use as medium is the dominant parameter for having good spectrum of light. Preparing a water lens by using plastic sheet and clear water, and then getting the focal spot on a required platform. Then the temperature of the platform is transferred to a copper coil and then to water, through conduction and convection processes. The aim is to get hot water in less cost.
24	ME	Mr. Rakshith Kumar Shetty	4VP16ME075 4VP17ME408 4VP15ME008 4VP16ME071	DESIGN AND FABRICATION OF MULTIPURPOSE AGRICULURE VEHICLE	Working	In this world of depleting resources, renewable energy plays an important role. The role of renewable energy in tomorrow's world is of great significance for the global environmental stability. Sun, wind and flowing or stored hydro are considered the most common renewable energy sources for power generation. Out of these three renewable energy resources, the advantage of hydro energy is that it can continuously supply energy and can serve as a base power. Hydro energy is one of the major renewable energy sources. The water wheels were developed in the early ages for the power production, due to their large diameter and small contact area they failed in utilizing water sources effectively, therefore water wheels were less efficient. Conveyor type turbine is designed to extract energy from flowing water. The kinetic energy available in the flowing water is made use to create the impulse action on turbine blades. To extract more energy, turbine blades will be in contact with the flowing water for more time, the mechanical energy is converted into electrical energy. Test conducted for a channel of water with velocity of 1.25 m/s gives an output of 285 watts.

25	ME	Mr. Santosh Kunnur	4VP16ME084 4VP16ME048 4VP16ME055 4VP16ME090	EXPERIMENTAL INVESTIGATION ON DIFFERENT PROPERTIES OF NATURAL HYBRID POLYMER COMPOSITES	Analysis	Agave Americana fibers can be used in technical applications such as reinforced composite materials, paper making, non-woven fabrics, geotextiles, etc. The leaves of this plant yield fibers and all the parts of this plant can be utilized in many applications. The —zero-waste‖ utilization of the plant would enable its production and processing to be translated into a viable and sustainable industry. Agave Americana fibers are characterized by low density, high tenacity and high moisture absorbency in comparison with other leaf fibers. These fibers are long and biodegradable. This composite fabrication indicates many conclusions about the mechanical properties such as tensile strength, flexure strength, compression strength and impact strength. The experiment indicates that alkali treated natural fibers gives more strength. The results show that their behaviour of mechanical properties is based on parameters used here.
26	ME	Mr. Kiran Kumar N A	4VP16ME014 4VP16ME068 4VP16ME091	"DESIGN AND ANALYSIS OF HYDROPNEUMATIC ACCUMULATOR	Fabrication/ Analysis	Hydropneumatic accumulators are widely used in industry due to their ability to store energy and absorb fluid shock. Researchers have designed kinds of novel accumulators with better performance in these specific areas. However, the pressure in these accumulators decreases significantly when the fluid oil is continuously supplied from the accumulator to the hydraulic system. The main objective is to design an Hydropneumatic accumulator with the specifications mentioned in the Ekk and HY-10 catalog. The accumulator is modeled in SOLIDWORKS 2020 and explicit dynamic analyzed using ANSYS Workbench 16.0. The accumulator is selected with the non-linear material viz. Structural steel NL, NBR, Hydraulic oil ISO-68. Later accumulator is analyzed for bottom impact, taking the effect of assumed load on diaphragm due considering deflection as major attribute. The

						report documents the process and methodology adopted to determine equivalent stresses, maximum deformations and equivalent plastic strain on the chosen accumulator and loading conditions. Based on the defomation, stress and energy summary the accumulator designed is accepted as a safe for working environment
27	ME	Dr. Manujesh B J	ME	Characterization and Long-Term Durability Analysis of Recycled Plastics	Analysis	Plastics are a wide range of synthetic or semi-synthetic organic compounds that are malleable and so can be moulded into solid objects. Plasticity is the general property of all materials which can deform irreversibly without breaking but, in the class of mouldable polymers, this occurs to such a degree that their actual name derives from this specific ability. The plastics are typically organic polymers of high molecular mass and often contain other substances. They are usually synthetic, most commonly derived from petrochemicals, however, an array of variants are made from renewable materials such as polylactic acid from corn or cellulosics from cotton linters. In developed economies, about a third of plastic is used in packaging and roughly the same in buildings in applications such as piping, plumbing or vinyl siding. Other uses include automobiles (up to 20% plastic), furniture, and toys. In the developing world, the applications of plastic may differ 42% of India's consumption is used in packaging. Worldwide, about 50 kg of plastic is produced annually per person, with production doubling every ten years. Plastics have many uses in the medical field as well, with the introduction of polymer implants and other medical devices derived at least partially from plastic. With increasing global consumption and their natural resistance to degradation, plastic materials and their accumulation in the environment is of increasing concern.

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						This present work aims at recycling the thermoplastic into standard specimens and characterizing for some mechanical applications. The study also aims at degrading mechanism via normal dry sun aging and salinity conditions. The tensile and flexural characterizations have been done successfully to understand the mechanical behaviour. Through the inferred results it is obvious that the salinity degradation has more impact than the normal dry sun aging