

## SOLAR AND POWER GENERATION BASED 2018 -19



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Here is the list of project titles 2018 and 2019.



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Here we provide **MECHANICAL ENGINEERING 2018 project lists** with abstracts. we do train a student from basic level of mechanical engineering which bases the project that includes live project development class and also detailed information buy our S.M.E ( Subject matter experts ) , projects implementation, final project demo . Wide variety of **SOLAR AND POWER GENERATION** based projects, both real time and prototype is been developed.

If you have questions regarding these projects feel free to contact us. You may also ask for abstract of a project idea that you have or want to work on.

The **own projects idea** for diploma and Engineering students can also encouraged here.

## 2018 - 19 SOLAR AND POWER GENERATION BASED PROJECTS

### **TITLE – FOOT STEP POWER GENERATION ( TSP 01 )**

This project attempts to show how energy can be tapped and used at a commonly used system, the generation of electricity through the Foot Step mechanism. Generation of electricity through the Foot Step power generator mechanism is one of the most recent power generation concepts. This device converts the kinetic energy of the human foot steps into electric energy by installing foot step power generators at footpaths, it takes the stroke motion of the foot and converts it to the rotary motion by rack and pinion mechanism and it generates the electricity.

### **TITLE – HELICLE WIND TURBINE ( TSP 02 )**

So many power generator available in our country to generate the power here we design a model which is generating a power from natural claimatation .In our country the power problem is increasing day by day due to lake of rain water To avoid the power problem in our country the hybrid power generator are used to generate power throughout the day and night. The helicle wind turbine consists of aluminium flat of thickness one mm and width of 4-5 cm, a dc generator is used in order to generate the power, simultaneously power is stored in the battery via inverter and this is used for house hold supplies .

Aluminum sheets, dc generator and mild steel angles are used .

**TITLE – HUMP POWER GENERATION ( TSP 03 )**

This project attempts to show how energy can be tapped and used at a commonly used system, the generation of electricity through the speed breaker mechanism. Generation of electricity through the speed breaker mechanism is one of the most recent power generation concepts. This device converts the kinetic energy of the vehicles into electric energy by installing movable speed breaker on the road, it takes the stroke motion of the vehicles and converts it to the rotary motion by rack and pinion mechanism and it generates the electricity.

This project also explains clearly, the working principle of the designed system, its practical implementation, and its advantages. The components have been fabricated and assembled. Practical testing of the system has been done with different loads at different speeds. The utilization of energy is an indication of the growth of a nation. One might conclude that to be materially rich and prosperous, a human being needs to consume more and more energy. And this project is best source of energy that we get in day to day life.

**TITLE - EFFICIENT HYBRID POWER GENERATOR AND MULTI PURPOSE UTILIZATION (WITH SOLAR TRACKING SYSTEM AND PANEL CLEANING MECHANISM) ( TSP 04 )**

This project consists of solar power and Wind mill generator .Solar tracking system is attached to the model, using which the panel's will be tilted according to the sun movement to utilize efficient energy. The wind mill generates voltage during day and night time when wind is available .This is a prototype and we can produce 12v always and charge the 12v,

2.7.AHC battery through we can use for lighting purpose .Three hours is required to charge the battery (full charge). Consequently, in this project an attempt is made to make the electric and mechanical systems share their powers in an efficient way.

And a panel cleaning mechanism will be installed, which automatically cleans the panels everyday when the solar panel reached the middle position. That is, a DC motor with duster arrangement will swipe the solar panels once the light detecting resistor generates the signal in the afternoon.

**TITLE – REGENERATIVE BRAKING SYSTEM ( TSP 05 )**

Vehicles driven by electric motors use the motor as a generator when using regenerative braking: it is operated as a generator during braking and its output is supplied to an electrical load; the transfer of energy to the load provides the braking effect. Regenerative braking is used on hybrid gas/electric automobiles to recoup some of the energy lost during stopping. This energy is saved in a storage battery and used later to power the motor whenever the car is in electric mode.

**TITLE – SOLAR TRACKING SYSTEM WITH PANEL CLEANING MECHANISM ( TSP 06 )**

- In this project we are acquiring the data from the light intensity senses. Which are then fed to the comparators, and then they are fed to the Microcontroller. The software is developed in the Microcontroller such that It collects the data from the comparators and then drives the DC motor either in the clock wise or in the anti clock wise direction. Here, depending on the light that falls on both

the sensors, there will be a slight potential difference and this causes the Microcontroller to drive the DC motor till both the sensors gets the same light intensity and at this point of time the motor stops and thus indicates the correct location required by the software.

**TITLE - FABRICATION OF VERTICLE AND HORIZONTAL AXIS WIND MILL ( TSP07 )**

Wind turbines are machines that generate electricity from the kinetic energy of the wind. In history, they were more frequently used as a mechanical device that turned machinery. Today, turbines can be used to generate large amounts of electrical energy in wind farms both onshore and offshore.

**TITLE – POWER GENERATION USING BICYCLE ( TSP 07 )**

All we know about bicycle generator, where a small dc generator is attached to one of the wheel (generally back wheel) of the bicycle. When the bicycle is running, the rotor of the generator which is attached to the wheel of the cycle, also rotates and due to this an emf is generated across the output terminals of the generator. This emf is then generally used for lighting the head-light of the bicycle The bicycle generator is relatively small and a small torque is required to make rotation of its rotor.

**TITLE - GENERATION OF ELECTRICITY THROUGH SPEED BREAKER MECHANISM ( TSP 08 )**

The project is concerned with generation of electricity from speed breakers-like set up. The load acted upon the speed breaker -setup is there by transmitted to rack and pinion arrangements. Here the reciprocating motion of the speed-breaker is converted into rotary motion using the rack and pinion arrangement. The axis of the pinion is coupled with the Stepper Motor. The stepper motor works as a dynamo. When the

stepper motor coupled to pinion rotates in clockwise or antilock wise direction, the kinetic energy is converted into electrical energy. The generator produces the DC current. This DC current now sent to the storage battery where it is stored during the day time. This current is then utilized in the night time for lighting purposes on the either sides of the road to a considerable distance.

**TITLE - EFFICIENT HYBRID POWER GENERATOR AND MULTI PURPOSE UTILIZATION (WITH SOLAR TRACKING SYSTEM AND PANEL CLEANING MECHANISM) ( TSP 09 )**

This project consists of solar power and Wind mill generator. Solar tracking system is attached to the model, using which the panel's will be tilted according to the sun movement to utilize efficient energy. The wind mill generates voltage during day and night time when wind is available .This is a prototype and we can produce 12v always and charge the 12v, 2.7.AHC battery through we can use for lighting purpose .Three hours is required to charge the battery (full charge). And a panel cleaning mechanism will be installed, which automatically cleans the panels everyday when the solar panel reached the middle position. That is, a DC motor with dfuster arrangement will swipe the solar panels once the light detecting resistor generates the signal in the afternoon.

**TITLE - FABRICATION OF SOLAR OPERATED SPRAYER ( TSP 10 )**

Solar pesticide sprayer can give less tariff or price in effective spraying. Solar energy is absorbed by the solar panel which contains photovoltaic cells. The conversion of the solar energy into electrical energy is done by these cells. This converted energy utilizes to store the voltage in the DC battery and that battery further used for driving the spray pump.



**TITLE – STAIR CASE POWER GENERATION ( TSP 11 )**

The project is concerned with generation of electricity from STAIR CASE - like set up. The load acted upon the Foot Step power generator -setup is there by transmitted to rack and pinion arrangements. Here the reciprocating motion of the Foot - Step is converted into rotary motion using the rack and pinion arrangement. The axis of the pinion is coupled with the Stepper Motor. The stepper motor works as a dynamo. When the stepper motor coupled to pinion rotates in clockwise or antilock wise direction, the kinetic energy is converted into electrical energy.

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