Literature Survey for Sun Tracking Hybrid Solar Inverter

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ABSTRACT

Solar panel has been used increasingly in recent years to convert solar energy to electrical energy. The solar panel can be used either as a stand-alone system or as a large solar system that is connected to the electrici0155ty grids. The earth receives 84 Terawatts of power and our world consumes about 12 Terawatts of power per day. We are trying to consume more energy from the sun using solar panel. In order to maximize the conversion from solar to electrical energy, the solar panels have to be positioned perpendicular to the sun. Thus the tracking of the sun's location and positioning of the solar panel are important. The goal of this project is to design an automatic tracking system, which can locate position of the sun. The tracking system will move the solar panel so that it is positioned perpendicular to the sun for maximum energy conversion at all time. Photoresistors will be used as sensors in this system. The system will consist of light sensing system, microcontroller, gear motor system, and a solar panel. Our system will output up to 40% more energy than solar panels without tracking systems , the design of Solar Inverter which is required to run AC loads which is mostly used as consumable purpose. The power output of the designed inverter is 100W, input voltage is 12V ,Output is 220 V, 50Hz square wave output.

Keywords: Solar Energy, Microcontroller, Solar tracking mechanism, Inverter.

INTRODUCTION

The system consists of light sensing, tracking, charging, processing, controlling, converting and display units. It consists of solar tracking mechanism which allows more energy absorb solar panel and the corresponding energy production is more because the solar panel movement is almost normal to the sun light. Rotation of the solar panel is done by DC servo motor The Automatic Sun Tracking System (ASTS) was made as a prototype to solve the problem, mentioned above. It is completely automatic and keeps the panel in front of sun until that is visible. In case the sun gets invisible e.g. in cloudy weather, then without tracking the sun the ASTS keeps rotating the solar panel in opposite direction to the rotation of earth. But its speed of rotation is same as that of earth's rotation. Due to this property when after some time e.g. half an hour when the sun again gets visible, the solar panel is exactly in front of sun and its

rotation is controlled by using processing and control units based on the light sensing unit. The absorb solar power is stored in a battery and to convert dc power supply to ac supply by using inverter . The need of running AC Loads on solar energy leads us to the design of Solar Power Inverter.. Since the majority of modern conveniences all run on **220** volts AC, the Power Inverter will be the heart of the Solar Energy System. It not only converts the low voltage **12** volts

DC to the **220** volts AC that runs most appliances, but also can charge the batteries if connected to the utility grid as in the case of a totally independent stand-alone solar power system.An inverter is an electrical device that converts direct current **(DC)** to alternating current **(AC)**; the converted AC can be at any required voltage and frequency with the use of appropriate transformers, switching, and control circuits. Solid-state inverters have no moving parts and are used in a wide range of applications, from small switching power supplies in computers, to large electric utility high voltage direct current applications that transport bulk power. Inverter.are commonly used to supply AC power from DC sources such as solar panels or batteries.

LITERATURE SURVEY:

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CONCLUSION:

In developing countries usage of electricity increasing day by day. Mostly the electricity generate with using of non-renewable energy sources, and we know non renewable sources are comes to end so fastly so now we should to thinking about this. We should to make some enomotive, so which helps to increases the uses of renewable energy sources.

We should to make some innovative so which helps to increase the uses of renwable energy sources By considering this point we decide to make 'SUN TRACKING HYBRID SOLAR INVERTER' which helps to absorb more solar energy by solar panel and feed to inverter to generate electricity.

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