



## AUTIOMOTIVE, INTELLIGENT TRANSPOSRT

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**ABSTRACT:** A solar wind turbine is a device which can convert both solar and wind energy into electrical energy. In our daily life we come across solar energy and wind energy which are being separately converted into electrical energy. This model is much more beneficial as it can convert both the solar and wind energy into electrical energy. This model can be used in areas with low sunlight and low wind. But in general producing electrical energy either from solar source or a wind source requires high amount of radiations or high pressure winds, where as this model can produce same amount of energy even with low radiation and low pressure winds. Such a model can be used in automobile industry; this setup can be provisioned on the top of the automobile and be used. When the car is in movement the turbine converts wind energy into electrical energy and when in stationary mode it uses solar and hence converts solar power into electrical energy. The model can play a vital role in reducing the pollution as the automobile doesn't need any fossil fuel and there is no combustion of fuels which curbs the production of chlorofluro carbons. In this prototype we are not making use of any engine and ejection module which indeed reduces the total weight of the automobile increasing the efficiency. There can be a good market for this type of automobiles as new restrictions are going to be implemented by the governments all over the world to reduce the pollution levels. The production and maintenance of such models is pocket friendly as this doesn't require much attention towards the wear n tare of the components.

**KEYWORDS:** Turbine, Solar Energy, Wind Energy, Electricity, Radiations, Pressure, Automobile, Pollution, Fossil Fuels, Prototype, Engine, Ejection Module, Chlorofluro Carbons, Maintainance

### A. INTRODUCTION:

Internet of things (IoT) is inter-connection via computing devices embedded in daily used objects, enabling them to send and receive messages. It makes the real world into virtual world by making physical objects and living beings interact with each other through wireless networks. In IoT Smart phones and tablets with sensors are connected to the internet. Machines, cars, wearable devices, jet engines, machines etc. interact with respective devices to collect and exchange data. Due to IoT and machine to machine technology there are vast business opportunities available to health care, transport and agriculture, security, airlines etc. In IOT the physical objects are accessible through internet. The physical objects are assigned with IP address and sensors so that they can access through internet so that the physical objects can collect or transfer the information without the intervention of human beings. Without IoT we need to observe, analyse and if physical devices are not working properly we should make them repaired but with the intervention of the internet they themselves can identify, observe themselves without the intervention of the human. Since they are connected with the internet they can be controlled from anywhere which ensures more safety and

efficiency. An organization with IoT has a great advantage by improving their performance in more secure way which in turn provides better results. They also can increase the efficiency and reducing the cost through tracking of the objects through sensors and actuators and deriving the benefit from real time insights and analytics.

Automotive is the term generally relating to or concerned with motor vehicles. As we know internet of things is connecting motor vehicles to the internet enabling them to send and receive messages.

### B. HISTORY OF IOT:

In 1949 the beginning of the 'Internet of Things'(IOT) starts when Norman Joseph Woodland invented the bar code. He obtained his idea when he drew four lines in the sand at a beach in Miami. Woodland then received the patents for the linear bar code in 1952. In October 1950, Morton Heilig developed "Sensorama", the first head mounted display that gave the user the experience of riding a motorcycle in Brooklyn. In 1955 Invention of first wearable computer inside a shoe, used for predicting roulette wheels by Edward O. Thorp. In 1967 Hubert Upton invents an analog wearable computer with eyeglass-mounted display to aid in lip reading. In 1969 the US Dept. Of Defense sent the first message over the



ARPANET, the predecessor of the Internet. Mario Cardullo receives the first patent for a passive, read-write RFID tag which revolutionizes retailing in 1973. Less than 12 months after the RFID is developed, the universal product code (UPC) label is used to process purchases at a supermarket for the first time (Wrigley's Chewing Gum). In the early 80's members of the Carnegie-Mellon computer science department installed micro-switches in the Coke vending machine to monitor number of bottles. In 1994, "Forget-Me-Not" is invented by Xerox Euro-PARC a wearable device that uses wireless transmitters to communicate between people and devices while storing the information in a database. This same year Steve Mann developed the first wireless wearable camera. In 1995, Siemens developed the "M1", the first machine to machine (M2M) communication application over a wireless connection used for point of sale terminals, remote monitoring and tracking. In the same year, Nicholas Negroponte and Neil Gershenfeld from MIT published an article in Wired called "Wearable computing. In late 1990s before the turn of the century, Sanjay Sarma, David Brock, and Kevin Ashton begin connecting objects together using RFID technology at the Auto-ID Center at MIT. In 2001, David Brock published a paper "The Electronic Product Code (EPC): A Naming Scheme for physical Objects" to propose a unified directory of identification numbers of products to track them throughout their life-cycle. In 2003, Bernard Traversat published "Project JXTA-C: Enabling a Web of Things" suggesting an open source set of protocols for peer to peer computing. A theory that would allow multiple objects to communicate between each other. In 2004, configuring home lights and switches, home healthcare, and shipping monitoring. In 2005, faculty members of Interaction Design Institute IVREA (IDII) in Italy, designed the "Arduino", an inexpensive and user-friendly microcontroller to help in the interaction of two objects. In 2008-2009, Cisco internet Business Solutions Group claimed "The Internet of Things" was born because there were more objects connected to the internet than people. Since, 2014 "Internet of Things" is evolving rapidly. Technology and companies are adapting to this new reality.

### C. REVIEW OF LITERATURE:

1) As the world discovers new ways to meet its growing energy needs, energy generated from Sun, which is better known as solar power and energy generated from wind called the wind power are being considered as a means of generating power. Though these two sources of energy have attracted the scientists for a very long time, they are not able to decide, which of the two is a better source to generate power. Now scientists are looking at a third option as well. Scientists at Washington State University have now combined solar power and wind power to produce enormous energy called the solar wind power, which will satisfy all energy requirements of human kind.

#### 2) Advantages of Solar wind power.

- The scientists say that whereas the entire energy generated from solar wind will not be able to reach the planet for consumption as a lot of energy generated by the satellite has to be pumped back to copper wire to create the electron-harvesting magnetic field, yet the amount that reaches earth is more than sufficient to fulfill the needs of entire human, irrespective of the environment condition.
- Moreover, the team of scientists at Washington State University hopes that it can generate 1 billion billion gigawatts of power by using a massive 8,400-kilometer-wide solar sail to harvest the power in solar wind.
- According to the team at Washington State University, 1000 homes can be lit by generating enough power for them with the help of 300 meters (984 feet) of copper wire, which is attached to a two-meter-wide (6.6-foot-wide) receiver and a 10-meter (32.8-foot) sail.
- One billion gigawatts of power could also be generated by a satellite having 1,000-meter (3,280-foot) cable with a sail 8,400 kilometers (5,220 miles) across, which are placed at roughly the same orbit.
- The scientists feel that if some of the practical issues are solved, Solar wind power will generate the amount of power that no one including the scientists working to find new means of generating power ever expected.

#### 3) How does the Solar wind power technology work?

The satellite launched to tap solar wind power, instead of working like a wind mill, where a blade attached to the turbine is physically rotated to generate electricity, would use charged copper wire for capturing electrons zooming away from the sun at several hundred kilometers per second.



**D. CONCLUSION:**

- Solar wind energy is the best way to use the renewable sources for the production of electricity.
- This is also the best way to reduce the pollution level caused by the automobiles.
- We can develop an alternative use for the fossil fuels and run the automobiles with the help of this hybrid system.

**E. SECONDARY METHODOLOGY:**

Secondary data accumulated over a span of 10 days is taken as a base for the study. Various online sources.

**F. NEED FOR THE STUDY:**

Due to IoT the physical objects such as cars can be easily tracked thereby improving the efficiency of the economy. Through IoT the situation can be enhanced and can be reported to the insurance companies so that immediate action can be taken. So through IoT the accidents can be controlled and physical objects can perform their work without the intervention of human. So there is need to study IoT based on automotive intelligent transport system.

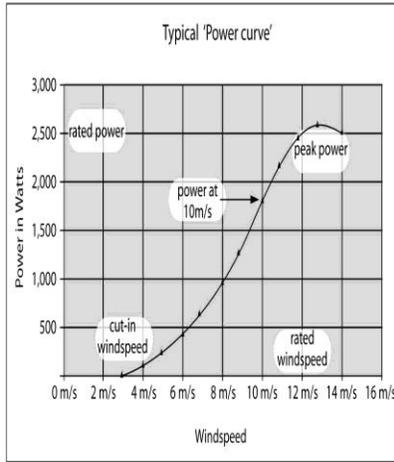
**G. CONCEPT:**

The major problems faced today is pollution. This is caused by burning of fossil fuels like petrol and its products. The common fuel used to run automobiles is the burning of petrol which releases harmful gases like carbon-di-oxide and carbon monoxide which are the major pollutants thereby depleting the ozone layer. These react with the tri-oxide in the ozone layer and there by deplete it. The effective way to curb this problem is to find alternative sources of running the automobiles. This can be done by using the natural sources of energy like solar and wind. Here we can use the natural solar radiations to produce the energy and the wind energy combined together for a effective output. The prototype is a "S" shaped turbine which is coated with black on the outer surface and the inner surface of the curve is affixed with reflectors like aluminum foil.

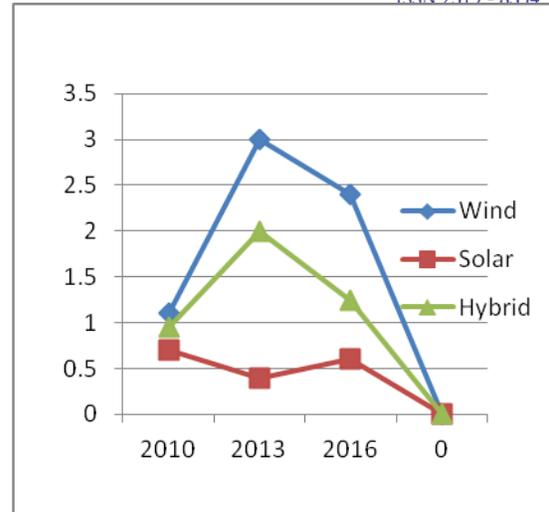
When the solar radiations are imparted onto the turbine ,it rotates by reflecting the light with the help of the reflectors in the inner surface. The rotational energy can be converted into electrical energy with the help of the turbine axis which can be connected to the gear box which regulate the speed as per the need of the output power. The gear box is further connected to the generator which generates the power needed for the working of the automobile. The generated power is then given to the power house (battery) for storing purpose. When the radiations are low and there is enough wind blowing for the turbine to rotate, it uses the pressure of the wind to produce the rotations which is further converted into electrical energy. This turbine can be placed on the top of the automobile and be used for the production of the energy required by the automobile. When the prototype is in static position it uses the solar energy to produce the electricity and when the prototype is moving the wind overtakes the effect of solar radiations and help for the production of the electricity. As the prototype uses both the natural sources its efficiency is high when compared to that of the solar energy alone.

The beneficial thing on using this type of a turbine is that we can increase the power generation with minimal expenditure and low maintenance cost. This prototype can be placed on te top of the automobile and can be used. We can produce the power by using the natural day lights even the regular bulbs in the cellars. This prototype decreases the amount of pollution levels and saves our planet from the effect of radiations and help for the normal changes in the weather.

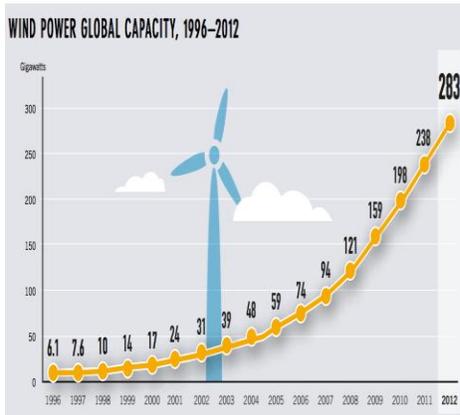
We can even use such a prototype on building tops and other hilly areas to provide the electricity required for the daily usage of the common people. As the generally used fossil fuel coal is the state of extinction and the petroleum products last for only a few years this can find a great scope in the near future. As the governments all over the world are planning to impose heavy rules against the pollution such a prototype can be handy for the prevention. Prevention is always better than cure. SO let's prevent at least now for the better future of the upcoming generations.



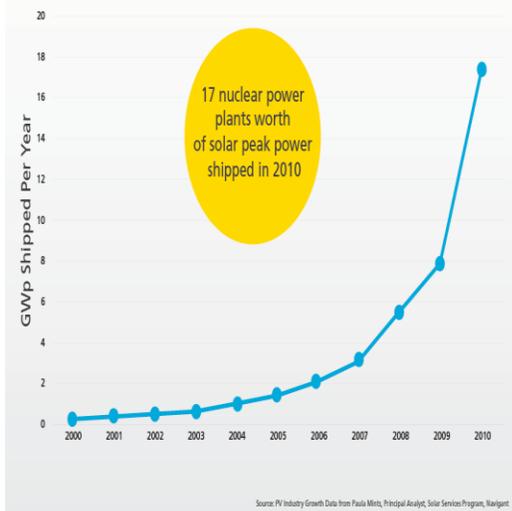
Typical Power Curve



Efficiency of Solar Wind HYbrid



Typical Wind Energy  
Solar Growing Rapidly, Averaging 65%  
Compound Annual Growth Rate for the Past 5 Years



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