

## Vertical Wind Oxygen Tree

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**ABSTRACT:** *Trees naturally convert the carbon dioxide into oxygen. But today because of Greed Selfish Humans are cutting trees and forests and on that place we humans are building white cement forest. Population is increasing and number of trees are decreasing. Co<sub>2</sub> is not good for humans but Trees convert water into oxygen which we humans need to survive. This will lead to Global warming problems, Acid Rain, respiratory disease many more. But do not worry now Artificial Trees will do this Job in future. This Tree opens up new prospects for urban lighting in that it satisfies today's most pressing environmental, social, cultural and aesthetic demands.*

**Keywords:** LDR, PIC 16F877A, pc software vb6. Solar Panels, temperature sensor, Vertical axis windmill, Voltage Regulators.

### I. INTRODUCTION

The Vertical axis windmill is a complicated but innovative design, probably the most complex for a wind power harnessing structure. Though the mechanism is not like that of any other conventional windmill, it works on the same principle of wind power generation. The design of vertical windmill is based around a continuously rotating carousel, which comprises of symmetrical airfoils. The main feature of the windmill is that the whole system is mounted on a fixed vertical shaft. The vertical shaft remains stationary but airfoils can move 360 degrees, independent of the main shaft. Each airfoil can be rotated around its own axis with the help of a top mounted central weather vane. The central vane keeps the cam shaft pointed at the winds. In high intensity winds, the airfoils can be rotated to a zero angle of attack in order to prevent any kind of damage. Solar PV panels collect energy from the sun and convert it into electricity. PV systems convert sunlight directly into electricity. "Photo" refers to light and "voltaic" to electricity. When sunlight knocks electrons loose from the silicon, electrons move up from the bottom layer of silicon and crowd the electrons in the top layer. The electrons freed from the top layer are collected by electrical contacts on the surface of the top layer and routed through an external circuit, thus providing power to the electrical system attached to the panels. Using Water electrolysis to produce hydrogen and oxygen is an old technology originating in the early 19th century shortly after Volta introduced the first battery in 1800.

### II. WORKING

#### Vertical Axis Windmill:

Vertical axis windmill is a complicated but innovative design, probably the most complex for a wind power harnessing structure. Though the mechanism is not like that of any other conventional windmill, it works on the same principle of wind power generation. The design of vertical windmill is based around a continuously rotating carousel, which comprises of symmetrical airfoils. The main feature of the windmill is that the whole system is mounted on a fixed vertical shaft. The vertical shaft remains stationary but airfoils can move 360 degrees, independent of the main shaft. The main central fixed shaft is heavy and can withstand any possible wind load.

All the forces experienced by the airfoil are transferred to the carousel through the airfoil's mounting bearings. The push rod and bell cranks don't perform much work. They just control the attitude of airfoils, close to their center of lift. The airfoils are so mounted that their point of rotation is forward of their center of lift. This will allow them to have a natural tendency to weather vane.

#### Solar Panels:

There are two main types of solar panels 1) solar electric panels and 2) solar water heating panels. solar photovoltaic (PV) panels, which provide electricity. PV panels collect energy from the sun and convert it into electricity. PV systems convert sunlight directly into electricity. "Photo" refers to light and "voltaic" to electricity. A PV cell is made of a semiconductor material, usually crystalline silicon, which absorbs sunlight. PV cells at work in simple mechanisms like watches and calculators. More complex PV systems produce solar electricity for houses and the utility grid. The utility grid is the power source available to your local electricity provider. PV cells are typically combined into modules, or panels, containing about 40 cells. Roughly ten modules constitute a PV array, or grouping of panels.

**LDR:**

It is relatively easy to understand the basics of how an LDR works without delving into complicated explanations. It is first necessary to understand that an electrical current consists of the movement of electrons within a material. Insulators with a high resistance have very few free electrons, and therefore it is hard to make them move and hence a current to flow. An LDR or photoresistor is made of any semiconductor material with a high resistance. It has a high resistance because there are very few electrons that are free and able to move - the vast majority of the electrons are locked into the crystal lattice and unable to move. Therefore in this state there is a high LDR resistance. As light falls on the semiconductor, the light photons are absorbed by the semiconductor lattice and some of their energy is transferred to the electrons. This gives some of them sufficient energy to break free from the crystal lattice so that they can then conduct electricity. This results in a lowering of the resistance of the semiconductor and hence the overall LDR resistance.

**Principles of Electrolysis:**

Water electrolysis to produce hydrogen and oxygen is an old technology originating in the early 19th century shortly after Volta introduced the first battery in 1800, where the electrochemical flow is shown for acidic and alkaline environments. This work involves the alkaline reaction pathway. To understand the principles of electrolysis, perhaps the most basic experiment is the use of two pencils sharpened at both ends with the top being connected to a battery and the 3 of 11 bottoms inserted into alkaline water. The reactions are:

Positive:  $2\text{OH}^- \rightarrow \frac{1}{2}\text{O}_2 +$

$\text{H}_2\text{O} + 2\text{e}^-$

Negative:  $2\text{H}_2\text{O} + 2\text{e}^- \rightarrow \text{H}_2 + 2\text{OH}^-$

This is the same principle of even the most sophisticated water electrolysis machines with the difference being in efficiency and production rate as discussed below.

**PIC 16F877A:**

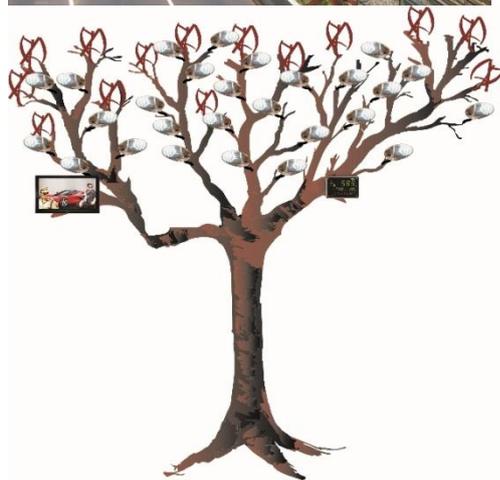
It is a RISC (Reduced Instruction Set Computer) design

Only thirty seven instructions to remember

Its code is extremely efficient, allowing the PIC to run with typically less program memory than its larger competitors.

It is low cost, high clock speed.

### III. Design



#### **IV. CONCLUSION**

##### **Applications:**

City highway and any internal Road .Housing Society, Residential Buildings Corporate Buildings, Office Buildings, School, College, Library, University building National Highway, State Highway .Village, rural areas, Forest, sea faces, Beaches, Border area .Hotels, public places, bus stop, Railway stations, airport .Tourist places, Temples. Government Buildings, etc.

##### **Advantages:**

- 1 . it can be Replace conventional tree in city areas
- 2 . The steady structure cannot fall like natural trees
- 3 . Like a natural tree it can produce the oxygen for freshening environment
- 4 . it create the Hydrogen Gas For fuel
- 5 . it can avoid water pollution by water electrolysis
- 6 . it work as street light
- 7 . its structure is decorative and attractive
- 8 . By advertisement display it will make income
- 9 . its not create any type pollution
- 10 . its create electricity from sun light.

##### **Disadvantages**

1. Implementation Cost is high
2. It required some maintenance.

## REFERENCES

### WebSite

[www.spotlightsolar.com/whatsnew/2012/.../solar-skyline-in-charlotte.htm...](http://www.spotlightsolar.com/whatsnew/2012/.../solar-skyline-in-charlotte.htm...)

<https://www.youtube.com/watch?v=TSZTSKGthL0>

<https://www.youtube.com/watch?v=gcljlyjMLfw>

<http://topdiysolarpanels.com/>

[solarelectricityhandbook.com](http://solarelectricityhandbook.com)

[www.electronicsforu.com](http://www.electronicsforu.com)

### Books

Basic Electronics – B.Ram

Digital Electronics – R.P.Jain

SOLAR ENERGY-S P Sukhatme

Digital electronics: Morris Mano

Communication system: Simon haykins.