TEMPERATURE CONTROL AND MONITORING SYSTEM BASED ON PLC

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ABSTRACT- In many fields of scientific research and production practice, the temperature control occupies a very important position, especially with a pivotal role in the industrial and agricultural production. With the development of electronic and computer technology, PLC from the original amount of simple logic control, and gradually have the function of a computer control system, since the computing power, anti-jamming capability, response speed, communications networking capability, flexibility, and maintainability many advantages aspects, PLC has been extensive use of temperature control system, the author designed temperature control system based on PLC. In the industry control equipment, temperature control absolutely decides product quality.introduces an industry control computer that interfaces with a PLC by Ethernet and a temperature control system based on the EJ1 temperature control module manufactured by the OMRON business.And the programme on the VC++ flat creates a userfriendly interface for communication between humans and machines, sets the temperature of each temperature, and implements real-time monitoring.

Index Terms- PLC (Programmable Logic Controller), OMRON company, Weather analysis, Temperature Control, Real-time monitoring.

I. INTRODUCTION

Trees are a part of the Human Cycle and play a major role in our life. They are our source of Oxygen. They produce Oxygen naturally by absorbing the Carbon Dioxide from the environment. But with the increasing problems of lack of land for Industrialization, people are cutting down trees not only for creating land available for Industries but also for producing paper, furniture, building supplies and other uses. As a result, oxygen levels are dropping with reduced number of trees. This leads to smog in air due to low oxygen levels and also respiratory problems for human beings as well as animals and other natural habitats. Other than the measures like carpooling and reducing use of fossil fuels, the most efficient way to control air pollution is to use Solar Oxygen Tree. Undoubtedly, Solar Energy is a great source of Energy. There is a great need to harness and spread awareness regarding this source of energy. The idea behind using photovoltaic modules is that it uses sunlight to convert solar energy directly into electrical energy and it also does not leave any residual elements that may lead to air pollution. Also, It is a renewable source of energy. The main aim of this project is

not only to decompose water into oxygen and hydrogen and releasing the gases but also to prevent air and water pollution to a significant degree.Artificial Solar Oxygen Tree uses less energy and is made of a variety of lowcost parts, including processors, protection modules, batteries, sensing units with various sensors, level indicators, process kits like the electrolysis kit, and other interfacing components.

II. OBJECTIVES

This study focuses on generating oxygen artificially with the use of solar energy. The main objective of this dissertation is to generate awareness among people about advantages of renewable resources. We all know that people are using non-renewable resources a lot. This will have many consequences as if its consumption is limited it may get extinct in near future. So, we have to find alternate measures for limiting the use of non-renewable resources to generate oxygen and reduce pollution. We have also focused on utilizing waste water for process of electrolysis.We'll spread knowledge about releasing water into water treatment facilities and using that water for the electrolysis process.During this process, hydrogen is also produced along with oxygen, and hydrogen can also be used in other ways.Because it has so many uses, hydrogen is frequently referred to as the fuel of the future.Additionally, we offer alternative methods for producing power using renewable resources in this dissertation.

III. PROBLEM STATEMENT

A] Increasing population: In today's world, our environment is facing a lot of stress because of increasing population and development. The problem is more severe in developing nations like India. The need of the hour is to implement eco-friendlier projects or plants that can provide advanced technology solutions, preferably by means of renewable energy and have least or no negative impact on environment. The biggest challenge is to implement this technology in Indian cities as we know the population is a lot more in this country and hence the environment is more polluted.

B] Cutting down trees: Trees are a vital component of life on Earth because they absorb carbon dioxide, which is necessary for the survival of practically all living things.But right now, people are chopping down billions of trees for things like paper, furniture, building materials, and other things.While the human population is quickly expanding, the number of trees is declining.
As a result, the air's oxygen content is decreasing while its carbon dioxide content is rising.

IV. METHODOLOGY

3.1 Block Diagram: -
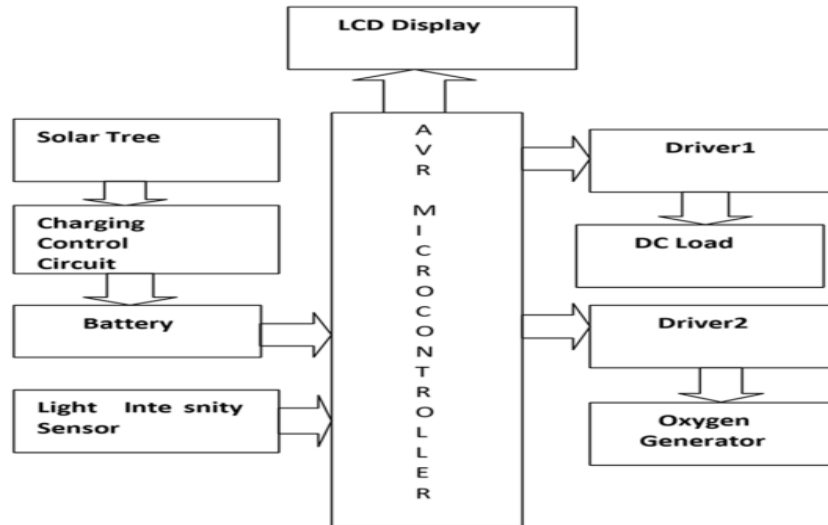
Fig.No. 1 Block Diagram for Proposed System

1. The solar panels were placed on 5 Ft tall solar tree which has 6 branches. Each branch carries one solar module. The arrangement of solar tree Spiraling Phyllataxy technique is used in designing of Solar Tree. For tracking maximum power from sun this Technique helps the lower panels from the shadow of upper ones. The efficiency of the plant can also be improved by this technology.

2. PV modules used to create electrical energy from solar energy.The rechargeable batteries were charged using this energy.The diodes were arranged in a circuit to stop the flow of electricity in the opposite direction, from ba tteries to solar panels.

V. CONCLUSIONS

The solar energy was converted into electrical energy by PV modules. This energy was used to charge the rechargeable batteries. We used one battery of 12v. And it sends the signal to AVR Microcontroller. Photo resistor or Light-dependent resistor (LDR) or photocell is a light-controlled variable resistor. LDRs or Light Dependent Resistors arevery useful especially in light/dark sensor circuits and send the signal to AVR Microcontroller.The AVR Microcontroller is set up to accept sensor signals, and depending on the circumstance s, it will use the Driver Circuit Board to control an LED or DC light.Information is displayed on LCD displays for display purposes.The oxygen generator is used to gauge both the ambient temperature and plant oxygen leve ls.

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