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### ARTIFICIAL SOLAR OXYGEN TREE

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#### ABSTRACT

An Artificial Oxygen Tree which aims at serving the humanity toward planet, having an ability to perform electrolysis of the sewage water and obtain the Hydrogen (for fuel) and Oxygen (to be emitted in the air) along with generating electricity from solar energy with the help of PV (Photo-voltaic) panels on the top of the trees. The model will be places on the sewage tanks and at the base Electrolysis will be carried out. It's a process in which electrical power source is connected to the 2 electrodes which are placed in the water, and a current is passed resulting in to appearance of Hydrogen at the cathode and Oxygen at the anode. The Hydrogen will be stored in a tank and can be used as a fuel and oxygen to be let out in the air for breathing. The PV on the top of the tree will collect energy from the sun and convert it into electricity. A PV cell is made of a semiconductor material, usually crystalline silicon, which absorbs sunlight. This electricity is stored and is used to light the LED's on the tree, hence making it as a streetlight.

**KEYWORDS:** Electrolysis, Photo-Voltaic etc.

#### INTRODUCTION

Trees naturally possess an ability to convert the carbon dioxide into oxygen. But today because of Humans Greed, We are cutting trees and forests and on that place we humans are building white cement forest. Hence we are facing scarcity of pure air. Population is increasing and number of tress are decreasing still people are obliterating tress after tress, to build and fill their pockets. CO<sub>2</sub> is hazardous for humans but Trees convert CO<sub>2</sub> into oxygen which we humans need to survive. Further depreciating of trees will lead to an extreme Global warming problems, Acid Rain, respiratory disease many more. Hence science and technology has give birth tour savior, An Artificial Oxygen Tree.

However, in many cells competing side reactions dominate, resulting in different products and less than ideal faradic efficiency.

Electrolysis of pure water requires excess energy in the form of over potential to overcome various activation barriers. Without the excess energy the electrolysis of pure water occurs very slowly or not at all. This is in part due to the limited self-ionization of water. Pure water has an electrical conductivity about one millionth that of seawater. Many electrolytic may also lack the requisite electro catalysts. The efficiency of electrolysis is increased through the addition of an electrolyte (such as a salt, an acid or abase) and the use of electro catalysts.

#### ELECTROLYSIS

An electrical power source is connected to two electrodes, or two plates (typically made from some inert metal such as platinum or stainless steel) which are placed in the water. Hydrogen will appear at the cathode (the negatively charged electrode, where electrons enter the water), and oxygen will appear at the anode (the positively charged electrode). Assuming ideal faradic efficiency, the amount of hydrogen generated is twice the number of moles of oxygen, and both are proportional to the total electrical charge conducted by the solution.

#### BRIEF IDEA ABOUT BASIC COMPONENTS AND THEIR CALCULATION

1. LCD
  - TYPE-16\*2
  - Voltage /Current Requirement- 5V/1.2mA
2. ELECTROLYSIS

