

CALIFORNIA STATE SCIENCE FAIR 2016 PROJECT SUMMARY

Name(s)

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Project Number

36464

Project Title

Creating Potable Water and Electricity for Undeveloped Countries

Abstract

Objectives/Goals

My objective is to create a device that purify unsafe water and while generating

Methods/Materials

Get the 4x18 inch PVC ½ inch and connect it to the PVC 3 way cup tisks

Connect all the 4x8 inch PVC ½ inch to the 3 way cup-links creating a box

Before Filling the silicone tubing, attach one end with the 2 ½ reduced ½ cup

Now you can fill the filter with your filtrating material: Jarbon, sand a

Now attach the second 2½ reduced ½ cup-links on top to complete the filtration system.

Secure Filter tubing to structure with the 2 ½ inch hose clands

Attach hose to shut off valve and connect to the bottom of the fill ration

Gather a 5 gallon bucket and drill a ⅝ hole towards the bottom of the bucket

Affix drain hose to the bottom of the bucket.

Screw in the hose from the bottom of the bucket to the top of the fination system.

Drill ½ inch hole on back side of 2½ reducer and affix hose reducer.

Cut 10 inch piece of hose, attach to hose reducer then to the top port of your O2 side of your Fuel cell.

Building your Water/Gas tank module.

Get (2) 1 inch PVC T reduced to ½ inch and a tacked by 4 inch by ½ inch PVC pipe.

Cut two 14 inch tubing.

(O2 and Attached the two pieces of hose to either side.

Connect the O2 tubing to the O2 side of the power

Connect the H2 tubing to the H2 side of the power

Plug in your solar panel to fuel cell

Results

.The data collected in Experiment indicated that

Decomposition of glycerol could be afficiently performed through photocatalysis; Around 90% of the glycerol in card solution was removed after two hours;

The hypothesis was supported.

The data accuracy could be improved by measuring Chemical/Biochemical Oxygen Demand. However, the data collected could still clearly examine the ability of photocatalysis to remove organic pollutants.

In Experiment, the results showed that

The addition of organic reductants and greatly enhance the yield of photocatalytic hydrogen generation.

Summary Statement

I created a device th could purify unsafe water and at the same time generates electricity for homes in undeveloped countries

Help Received

I would like to express my gratitude to the following people: - My family for their endearing support and their assistance provided in the construction of the device. My brother Zachary Benetatos for supervising me while conducting experiments