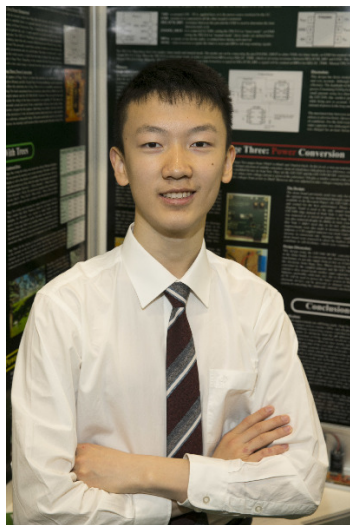


CWSF 2017 - Regina, Saskatchewan



Ollie Zhao

Amp Tree

Challenge: Energy

Category: Intermediate

Region: Greater Vancouver

City: Vancouver, BC

School: David Thompson Secondary

Abstract: "Amp Tree" can, and is designed to, harvest the electricity of living plants to power remote controlled electronics such as sensors and transmitters. It is also able to power smaller electronic devices. "Amp Tree" harvests its electricity from the pH difference between the plants and the soil. Meaning as long as the plant is alive, electricity will be generated without chemical reactions or other organisms.

Biography

I'm Ollie Zhao and I'm in Grade 9 Odyssey Mini at David Thompson Secondary School in Vancouver, B.C. I love sports and I played baseball and tennis during the summer and went snowboarding in the winter. My first serious competition was Vex Iq Robotics while I was still in Grade 7/8. At the same time, I also started my first Science Fair project. I had spectacular results, but the amount of work and time spent still seemed overwhelming. After the competitions, I finally attained the dreamed free-time but was never able to return to the plain old routine. I was addicted to large scale projects. Thus, I decided to participate in another Science Fair and this year my project is about generating electricity with plants. An undergraduate at The University of Washington performed an indoor experiment in a faraday cage and confirmed that trees hold a few hundred millivolts of charge back in 2007. However, very little has been done to utilize this power since then. I chose to take on this challenge because I was interested in power harvesting systems and I'm planning to put my project, "Amp Tree", on a year-long outdoor trial in the near future.

Awards

Value

Challenge Award - Energy - Intermediate Sponsor: Youth Science Canada	
Excellence Award - Intermediate - Gold Medal Sponsor: Youth Science Canada	\$250
Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University	\$4 000
Total	\$4 250