

CWSF 2015 - Fredericton, New Brunswick



James Lees

Close Encounters of the Fourth Kind

Challenge: Discovery

Category: Senior

Region: Chignecto East

City: Merigomish, NS

School: Northumberland Regional High School

Abstract: The manipulation of an ionized plasma using electromagnetic fields is crucial to the creation of nuclear fusion in a man-made reactor. Electromagnetic fields manipulate charged particles within the plasma, making it electromagnetically susceptible. Using varying strengths of solenoids, the effect of magnetic fields on light intensity was determined. It was found that polarity of the solenoids had a major effect on the intensity of light.

Biography

I'm James G. Lees, a long time participant in science fairs both regional and national, my projects having a particular interest with nuclear fusion. For the past three out of four years of my attendance at the CWSF my projects have included exploration of x-rays to create fusion, the design of a fusion reactor, and most recently the manipulation of a plasma with solenoids. I was inspired to research into this most intriguing field when I learned of the immense benefits of harnessing the energy of the sun, right here at home on planet Earth. Did you know that using fusion one 240mL glass of seawater can produce nearly 500,000 barrels of petroleum worth of energy? The usage creation of a nuclear fusion reactor would provide humanity with a completely clean, efficient, and sustainable means of creating energy, something of which we are in dire need. I hope that in the near future I might be able to construct a prototype of my fusion reactor, to better determine its feasibility, and possibly become one of the first sustainable fusion reactors in history.

Awards

Value

Excellence Award - Senior - Bronze Medal Sponsor: Youth Science Canada	
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Western University Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: Western University	\$1 000
Total	\$2 000