

CWSF 2016 - Montreal, Quebec



Tasnia Nabil

Uncovering the Thermal Response of Ferromagnetic NanoTherapy to Cure Cancer

Challenge: Health

Category: Intermediate

Region: Windsor

City: Windsor, ON

School: Massey S.S.

Abstract: This project investigates the thermal response of cancer cells with the heat from magnetic nanoparticle oscillations in Ferromagnetic NanoTherapy in an in vitro study. A small-scale prototype with optimum design was tested on cultured breast cancer cells. Various volumetric ratios of magnetic nanofluid and durations of the therapy were investigated to obtain the optimum results for an easy and efficient ideal cancer treatment.

Biography

My name is Tasnia Nabil and I am a grade 10 student enrolled in the enrichment program at Vincent Massey Secondary School. This is my third time at CWSF. Science has always been my greatest passion. My investigations have ranged from perfecting the performance of photovoltaic technology to optimizing the efficiency of a solar collector with nanofluids. Last year, I applied nanotechnology into the biomedical field and investigated the engineering parameters behind Ferromagnetic NanoTherapy ? a novel cancer treatment using magnetic nanoparticles. This year, I am uncovering the fundamental thermal responses of this therapy to further optimize it as a sustainable cancer treatment. Aside from CWSF, I have participated in other science competitions such as the Sanofi Biogenius Competition and I am a member of my school's Science Olympiad Team. I also am a member of the debate team and participate in robotics activities, student tutoring, and many math contests, such as the COMC, CSIMC, AMC, and Cayley. I am also an avid writer. Being able to make a difference in the world is the inspiration for my scientific journey. Presenting my novel ideas and scientific inquiries at CWSF is an amazing opportunity to raise awareness for a sustainable future.

Awards

Value

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

