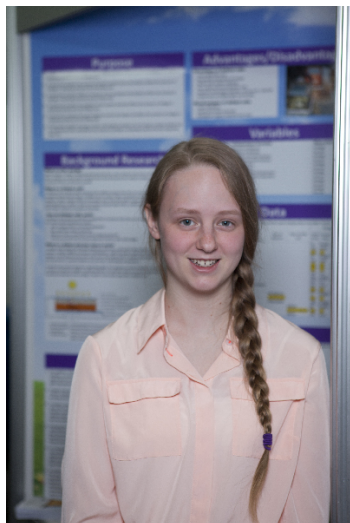


CWSF 2013 - Lethbridge, Alberta



Meagan Fabel

Fun in the Sun! Increasing Grätzel Cell Efficiency Using Diatom Frustules

Challenge: Energy

Category: Senior

Region: Windsor

City: Windsor, ON

School: Walkerville S.S.

Abstract: The introduction of Synedra diatoms into a Grätzel cell was examined, testing six independent variables (amount of diatom solution, growth solution, titanium dioxide solution, counter electrode preparation, type of pigment, and type of solar cell) to optimize electrical energy produced. Results indicated that the integration of Synedra diatom frustules into the Grätzel cell increased the voltage by 5.9 times compared to a regular Grätzel cell.

Biography

Meagan Fabel was born on May 10th, 1996 and is now a grade eleven student at Walkerville Collegiate Institute in the WCCA enriched arts program, in Windsor, Ontario. With teachers as parents, her early childhood developed her keen sense of curiosity and her strong desire to be environmentally friendly. Meagan has always had a keen interest and passion for science, math, and the environment. Meagan also participates in extra-curricular activities such as competitive figure skating, highland dancing, and music. Her career goals reflect her passion for science and math and she hopes to become a university professor for math and science education. Meagan has successfully competed at the Windsor Regional Science Technology and Engineering fair eight times previously, and is proud to represent her school and city this year at the Canada Wide Science Fair.

Awards

Value

The Manning Innovation Achievement Award Sponsor: Ernest C. Manning Awards Foundation	\$500
The Manning Innovation Achievement Award and \$4000 Manning Young Canadian Innovation Award Sponsor: Ernest C. Manning Awards Foundation	\$4 000
Renewable Energy Award - Senior Sponsor: Ontario Power Generation	\$1 000
Challenge Award - Energy - Senior Sponsor: Youth Science Canada	\$1 000
Excellence Award - Senior - Gold Medal Sponsor: Youth Science Canada	\$700
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UBC Science (Vancouver) Entrance Award Senior Gold Medallist - \$4000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$4 000
University of Manitoba Entrance Scholarship Senior Gold Medallist - \$5000 Entrance Scholarship Sponsor: University of Manitoba	\$5 000
University of Ottawa Entrance Scholarship Senior Gold Medallist - \$4,000 Entrance Scholarship Sponsor: University of Ottawa	\$4 000
Western University Scholarship Gold Medallist - \$4000 Entrance Scholarship Sponsor: Western University	\$4 000
Total	\$29 200

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