

CWSF 2007 - Truro, Nova Scotia



Dustin Hughes

Hot CO₂ The Energizer Reactor

Division: Engineering & Computing Sciences / Automotive
Category: Senior
Region: Timmins
City: South Porcupine, ON
School: Timmins High & Vocational School
Abstract: Fuel combustion aerosols have created a carbon cycle imbalance that shares a strong correlation to climate change. Electricity production and automobile use are the largest environmental imbalance contributors. An experimentally based alternative fuel approach to radiolytic conversion of evolved CO₂ to CO via thermo-electric generating processes is presented and has the potential to fulfill the Kyoto Protocol by reducing fossil fuel demands and CO₂ production.

Biography

I live in South Porcupine, Ontario. As a grade 12 student, I am currently a member of the varsity badminton team and I also labour as the student administrative council's Vice-President. Several of my favorite school subjects include science, mathematics and English. Outside of school I spend much of my spare time with family and friends. I am also involved in many extra-curricular activities such as cross-country skiing, snowboarding and water skiing. In the summer months I enjoy hiking, fishing, swimming and spending time at my cottage. I have received numerous medals and awards while participating in past INTEL ISEF and CWSF competitions. Currently, I am an Executive Board member of Volunteer Timmins, a member of the Mayor's Youth Advisory Council and the Co-Chair of Ontario Teen Leadership North. Several of my other interests include reading, sculpting, cooking and hockey. I also play the piano and violin. I one day hope to enter the field of medicine. Clearly, I lead an active lifestyle and enjoy assuming/participating in a large variety of tasks and activities.

Awards

Value

The Canadian Society for the Weizmann Institute of Science Scholarships Joseph W. and Joel Anthony Leon Kerbel Scholarship Sponsor: The Canadian Society for the Weizmann Institute of Science (Weizmann Canada)	\$9 400
Petro-Canada Peer Innovation Award - Senior - Ontario North & East Sponsor: Petro-Canada	\$200
Dalhousie University Faculty of Science Entrance Scholarship Senior Gold Medallist - \$4000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$4 000
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 000
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
The University of Western Ontario Scholarship Gold Medallist - \$2000 Entrance Scholarship Sponsor: University of Western Ontario	\$2 000
The University of Western Ontario Scholarship Silver Medallist - \$1500 Entrance Scholarship Sponsor: University of Western Ontario	\$1 500
Silver Medal - Earth & Environmental Sciences - Senior Sponsor: Petro-Canada	\$700
Gold Medal - Automotive - Senior Sponsor: AUTO21	\$1 500
Total	\$23 300