



CWSF 2008 - Ottawa, Ontario



David Castelino

Photonic Boom

Division: Health Sciences / Environmental Innovation

Category: Senior Region: Peel

City: Mississauga, ON **School:** St. Aloysius Gonzaga

Abstract: This project focuses on maximizing the efficiency and stability of a

dye-sensitized solar cell that utilises naturally occurring organic dye extracts to produce electrical energy. Techniques and materials found to optimize efficiency of the dye-sensitized solar cell were used to successfully design an efficient and cost-effective solar roofing tile material that can be used in

third-world countries. Average efficiencies of 14% were achieved.

Biography

As a grade twelve student at St. Aloysius Gonzaga S.S. in Mississauga, Ontario, David Castelino is a passionate scientist, fascinated with research in medicine and engineering. He has represented Ontario as a finalist at three Canada-Wide Science Fairs. In 2006, David represented Canada at the Australian National Youth Science Forum. In Australia, David had the opportunity to work alongside top scientists and participate in ?hands-on' science events and discussion groups on global issues. In 2007, David was selected to be on Team Canada and was given the opportunity to compete at the Intel International Science and Engineering Fair in Albuquerque. In New Mexico, he won a third place grand award in Energy and Transportation, as well as a Patent and Trademark Office Society patent citation for his solar cell innovation. Along with being a provincial-level swimmer, avid guitarist, saxophone player, and the Environmental Innovation expert for YSF's SMARTS Network, David enjoys writing for his high school newspaper and participates in his city's youth council. He has attained the bronze and silver levels in the Duke of Edinburgh Program, and he coaches swimming at his local community centre. In future, David intends to pursue a career in engineering and medicine.

Awards	Value
The Manning Innovation Achievement Award	\$500
Sponsor: Ernest C. Manning Awards Foundation	·
S.M. Blair Family Foundation Award - Senior	\$1 000
Sponsor: S.M. Blair Family Foundation	
Dalhousie University Faculty of Science Entrance Scholarship	\$4 000
Senior Gold Medallist - \$4000 Entrance Scholarship	
Sponsor: Dalhousie University, Faculty of Science	
NSERC Undergraduate Student Research Award - Senior Gold Medallist	\$5 625
Sponsor: Natural Sciences and Engineering Research Council of Canada (NSERC)	
The University of Western Ontario Scholarship	\$2 000
Gold Medallist - \$2000 Entrance Scholarship	Ψ2 000
Sponsor: University of Western Ontario	
The University of Western Ontario Scholarship	\$1 000
Bronze Medallist - \$1000 Entrance Scholarship	ψ. σσσ
Sponsor: University of Western Ontario	
University of Ottawa Entrance Scholarship	\$20 000
Senior Gold Medallist - \$20,000 Entrance Scholarship (\$5,000 each year	,
for 4 years)	
Sponsor: University of Ottawa	
University of Ottawa Entrance Scholarship	\$1 000
Senior Bronze Medallist - \$1000 Entrance Scholarship	
Sponsor: University of Ottawa	
Bronze Medal - Environmental Innovation - Senior	\$300
Sponsor: EnviroExpo, Presented by VIA Rail Canada	
Gold Medal - Engineering - Senior	\$1 500
Sponsor: Youth Science Foundation Canada	
Total	\$36 925



Youth Science Canada PO Box 297 Pickering ON L1V 2R4 www.youthscience.ca / info@youthscience.ca 416-341-0040

