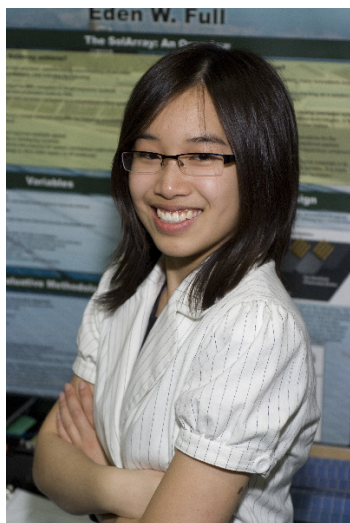


CWSF 2009 - Winnipeg, Manitoba



Eden Full

Dynamic Photovoltaics - The Sustainable SolArray

Division: Health Sciences / Environmental Innovation

Category: Senior

Region: Calgary Youth

City: Calgary, AB

School: John G Diefenbaker High School

Abstract: The SolArray is a novel high-precision, passive-active micro-tracking photovoltaic orientation system. It improves output by 40%, reduces costs by 70% and greatly conserves space. By harnessing wind to shift dye-sensitized solar cells, notches using push-pull solenoids limit motion based on sunrise, detected using a digital logic gate and comparator within the timing circuit. Performance was evaluated under a controlled exposure in comparison to current systems.

Biography

An aspiring social entrepreneur, I am a Grade 12 International Baccalaureate Diploma student at John G. Diefenbaker High School. Born and raised in Calgary, Alberta, Canada, I have had a passion for science and technology since I was three years old. I began participating in the Calgary Youth Science Fair in 2002 with my projects on solar energy, having represented Calgary nationally and internationally since 2006. In 2008, my research into energy accessibility was recognized with the United Nations High Distinction Award for Humanitarian Science Services, an Ashoka research grant and a Toyota Earth Day Scholarship. To give back to the community for supporting my interests, I volunteer with The Aero Space Museum of Calgary and Junior Achievement of Southern Alberta. I am the Alberta Coordinator of Youth Science Canada's SMARTS Program and the co-founder of my school's environmental club. During the summer of 2008, I was selected to attend the Shad Valley and United Space School programs. In my spare time, I love playing the violin and bass guitar, rock climbing, caring for my peach-faced lovebird named Birdie, and listening to music. I plan on pursuing an undergraduate engineering degree in the fall.

Awards

Value

Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 000
The University of Western Ontario Scholarship Silver Medallist - \$1500 Entrance Scholarship Sponsor: University of Western Ontario	\$1 500
The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$3000 Entrance Scholarship Sponsor: University of Ottawa	\$3 000
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Bronze Medal - Engineering - Senior Sponsor: Youth Science Canada	\$300
Silver Medal - Environmental Innovation - Senior Sponsor: EnviroExpo, Presented by VIA Rail Canada	\$700
Total	\$9 500