

# CWSF 2009 - Winnipeg, Manitoba



## Roopa Suppiah

### Closing-in on Fuel Cells

**Division:** Engineering & Computing Sciences / Automotive  
**Category:** Senior  
**Region:** Renfrew County  
**City:** Deep River, ON  
**School:** Mackenzie H.S.  
**Abstract:** A novel closed cycle fuel cell system utilizing low temperature thermal energy for the dehydrogenation of isopropanol and hydrogenation of acetone was demonstrated using a simple proton-exchange fuel cell. Industrial waste heat or solar energy can be utilized for the energy requirements of this process. This system can eliminate the difficulty of storing and/or distributing hydrogen for fuel cells in a hydrogen economy.

#### Biography

My name is Roopa Suppiah and I am a grade 12 student at Mackenzie High School in Deep River, Ontario. I am a pianist and violinist, and a saxophone player in my school's band. Also, I pursue my love for music as a member of my town's Symphony Orchestra. I am a blackbelt in Karate and I volunteer my time as a head coach of my town's Karate Club. I also enjoy playing competitively in other sports including soccer, basketball, and figure skating. Within school, I am the President of the Interact Club, a humanitarian student group. As well, independently, I am working towards a project that will take me to India this summer to drill wells and provide sanitation education for villagers in need. Over the last several years, I have pursued a keen interest in the environment through science fair, aiming to create solutions for our environmental crisis. Twice, I attended the National Science Fair, and last year, I was a member of Team Canada for the International Fair. I believe that my participation in science fairs has provided me amazing opportunities and experiences that I will take with me into my future.

#### Awards

#### Value

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 Gold Medallist - \$4000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$4 000
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
University of Ottawa Entrance Scholarship Senior Gold Medallist - \$20,000 Entrance Scholarship (\$5,000 each year for 4 years) Sponsor: University of Ottawa	\$20 000
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$3000 Entrance Scholarship Sponsor: University of Ottawa	\$3 000
Silver Medal - Automotive - Senior Sponsor: AUTO21	\$700
Gold Medal - Earth & Environmental Sciences - Senior Sponsor: Petro-Canada	\$1 500
<b>Total</b>	<b>\$38 700</b>