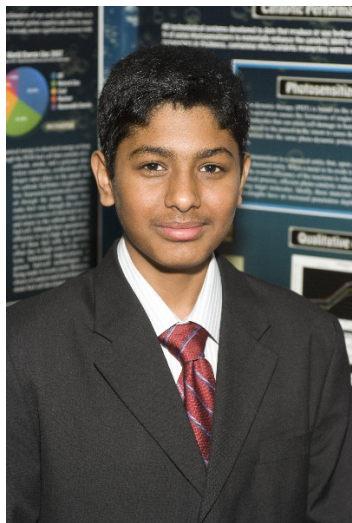


# CWSF 2009 - Winnipeg, Manitoba



## Dheevesh Arulmani

### Bio-Inspired Photonic Fuel Cell

**Division:** International / Environmental Innovation

**Category:** Junior

**Region:** Peel

**City:** Mississauga, ON

**School:** Tomken Road Senior P.S.

**Abstract:** All technological systems developed to date that produce or use hydrogen rely on noble metals such as platinum. This project investigates the possibility of using photosensitizers to potentially enhance the catalytic ability of polymer electrolyte membrane fuel cells. Different metallic foils measuring 25 nanometers in thickness, containing photo-catalytic properties were layered onto the catalytic carbon base forming a bimetallic photo-catalytic layer.

#### Biography

Dheevesh Arulmani is a grade 8 Student at Tomken Road Middle School SciTech Program and has a great passion for science and technology. His thirst for knowledge and curiosity motivates him to explore and investigate science in great depth. He loves to learn new topics and face challenges and hopes to join the next generation of scientists and probe future problems and inventions. His extensive participation and excellence in school clubs allowed him to represent SciTech at Skills Canada, FLL Robotics, Animation, bridge-building challenges and etc. Some of his notable awards include two consecutive Stellar Awards in 2007 and 2008 for winning the Robotic challenge and ToonBoom Animation, Silver medal in Regional Science fair 2008, Gold medal in Regional Science fair 2009, Canadian nuclear society's award, Peel Technological skills challenges award and Gold medal in Professional Engineer's of Ontario bridge building challenge. He also participated in Math Contests and won awards for last 3 years. He also achieved several academic excellence awards. His favourite hobbies as of age 4 are to solve jigsaw puzzles and play chess. Some of his favorite sports are tennis, skiing, biking and hiking. He intends to pursue his career in research in science and engineering.

#### Awards

#### Value

The University of Western Ontario Scholarship Gold Medallist - \$2000 Entrance Scholarship Sponsor: University of Western Ontario	\$2 000
Gold Medal - Environmental Innovation - Junior Sponsor: EnviroExpo, Presented by VIA Rail Canada	\$11 500
<b>Total</b>	<b>\$13 500</b>