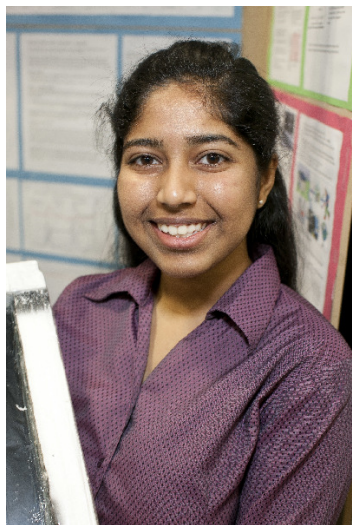


## CWSF 2011 - Toronto, Ontario



### Shakti Ramkumar

#### Hybrid House: Building Energy Efficiency by Working With Nature

**Challenge:** Energy

**Category:** Intermediate

**Region:** South Fraser

**City:** Surrey, BC

**School:** Kwantlen Park Secondary

**Abstract:** Reducing energy consumption in refrigeration, clothes drying, escalators and space heating by utilizing weather conditions and/or sensors is explored. Refrigerator performance was measured when heat dissipation from condenser-coil was 'facilitated'; a 'split' design is proposed. Energy consumption in clothes dryers was measured; moisture sensor is proposed. Energy-saving potential using motion sensor in escalators is estimated. A model solar-thermal collector was built, and its performance tested.

#### Biography

I am in grade 9 in the Inter-A program at Kwantlen Park Secondary in Surrey, BC. I was born in India, and came to Canada in 2004. I have also lived in South Korea, when my dad was working there. At home, I speak Tamil. I volunteer with the Surrey Youth Stewardship Squad, and routinely participate in tree-planting and park clean-up activities. At school, I am taking Math 11 and regularly tutor students in math and other subjects. Prior to admissions for each school year, I tour local elementary schools to speak to students about high-school options available at my program. In my free time, I like to read, play the acoustic guitar, play badminton, and to try out cooking. (I'm a vegetarian). I also do filming, video editing and sound mixing. I am very concerned about climate change and would like to contribute my share to avoiding catastrophic effects in the future. My previous science projects have all had an environmental theme, based on effective use of existing technology to reduce our consumption and increase efficiency. In the future, I hope to get a basic degree in engineering first, and maybe get another degree in social sciences subsequently.

#### Awards

#### Value

Excellence Award - Intermediate - Bronze Medal Sponsor: Youth Science Canada	\$300
The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
<b>Total</b>	<b>\$1 300</b>