

## CWSF 2008 - Ottawa, Ontario



### Chris Palmer, Pinky Langat

#### Bright Future of Energy: Dye-Sensitized Solar Cells

**Division:** Health Sciences / Environmental Innovation

**Category:** Senior

**Region:** Waterloo-Wellington

**City:** Guelph, ON

**School:** Centennial Collegiate & Vocational Institute

**Abstract:** The efficiencies of various pigments and electrolytes were analyzed in dye-sensitized solar cells. The optimal pigment was found to be anthocyanin extract from red cabbage, and the most effective electrolyte was found to be a saturated solution of guanidine thiocyanate in water-free ethylene glycol. Investigations on possible effects of GFP as an antioxidant and accessory pigment and of DNA to facilitate electron transfer are continuing.

#### Biographies

Chris - I am currently a grade twelve student at Centennial C.V.I in Guelph, Ontario. My lab partner, Pinky Langat, and I competed in the Waterloo-Wellington Science and Engineering Fair and won the Award of Excellence, an Award of Merit, the Best of Engineering, a Gold Medal for Senior Engineering and the Hydro One Award. I am also heavily involved in music, playing drums in my high school symphonic and jazz bands and a jazz sextet outside of school. I rock climb, bike, hike and winter-camp. I am currently participating in a four course, full semester, intensive environmental and outdoor ed program that focuses on peak oil / climate change and issue...

Pinky - My name is Pinky Langat, and I am a Grade 12 student at Centennial CVI. I am a Shad Valley Calgary alumnus and a current 2008 Loran Award Scholar. Some of my involvements include being a co-chair of the Guelph Youth Council, DECA Centennial Chapter President, an executive member of Centennial's social action club Global Outreach, a youth volunteer for Buddha's Light International Association of Toronto, and the Events Coordinator for the social awareness group Student Reach. I recently participated in Forum for Young Canadians, as I am very interested in world issues. I have performed in school drama, musicals, and dance productions. I also p...

#### Awards

#### Value

The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
Honourable Mention - Engineering - Senior Sponsor: Youth Science Foundation Canada	\$100
Bronze Medal - Environmental Innovation - Senior Sponsor: EnviroExpo, Presented by VIA Rail Canada	\$300
<b>Total</b>	<b>\$2 400</b>