

# CWSF 2012 - Charlottetown, Prince Edward Island



## Fun in the Sun - Improving the Efficiency of Grätzel Cells

**Challenge:** Energy

**Category:** Intermediate

**Region:**

**City:** ,

**School:**

**Abstract:** The effectiveness of Grätzel cells was examined, testing ten independent variables (type of pure dye, mixed berry dyes, dye preparation, surface area, dye pigments, light source, dyeing process, TiO<sub>2</sub> suspension, type of TiO<sub>2</sub>, and type of solar cell) to optimize electrical energy produced. Results indicated that an absorbed, raspberry, anthocyanin, 1", nano-particle TiO<sub>2</sub> cell, placed in a sunny location is the most efficient Grätzel cell.

| Awards  | Value   |
|---|---------|
| Excellence Award - Intermediate - Bronze Medal<br>Sponsor: Nuclear Waste Management Organization                | \$300   |
| Western University Scholarship<br>Bronze Medallist - \$1000 Entrance Scholarship<br>Sponsor: Western University | \$1 000 |
| Total   | \$1 300 |