

CWSF 2010 - Peterborough, Ontario

Sruti Arulmani

Photoautotrophic Composite Based Nanocrystalline Solar Cells

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by request.

Division: Physical & Mathematical Sciences

Category: Junior

Region: Peel

City: Mississauga, ON

School: Tomken Road Senior P.S.

Abstract: This research investigates implication of dye sensitizer composites to enhance electron transfer from sensitizer to TiO₂ semiconductor in nanocrystalline solar cells. It is implied that sensitizer composites sustain higher adsorption ranges in the light spectrum. Sensitizers including Zeaxanthin/Cryptoxanthin, Betalain and Anthocyanin were fabricated into composites for comparison with Chlorophyll. Characterization was performed with current-voltage curves, potentiostatic-measurements and open-circuit for presence/absence of light, and various

Biography

My name is Sruti Arulmani and I am 12 years old. I am a grade seven student at Tomken Road Middle School and I was accepted into the Sci-tech program for grade 6 to 8. At school my favourite subjects are science and geography. I enjoy learning about science very much because it is very fascinating and allows my knowledge and curiosity to flourish. I also take part in cross country running, track and field at school. My special interests are in dancing, reading, badminton and ping pong. I started dancing when I was eight and continue to enjoy this artistic sport and I attend a dance academy now. I have been playing ping pong for few years now and badminton for longer. Outside of education and sports I also take part in art programs during the summer as I take pleasure in expressing my creativity through art. My other favourites are hiking and travelling with my family. In the distant future I wish to pursue a career in archaeology or biology.

Awards

Value

The University of Western Ontario Scholarship Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Western Ontario	\$1 000
Bronze Medal - Environmental Innovation - Junior Sponsor: EnviroExpo, Presented by VIA Rail Canada	\$300
Total	\$1 300