

## CWSF 2011 - Toronto, Ontario



### Moaaz Rashad

#### Hydrogen Bioreactor: Optimizing Hydrogen Production in *C. reinhardtii* Algae

**Challenge:** Energy

**Category:** Senior

**Region:** Regina

**City:** Regina, SK

**School:** Regina Huda School

**Abstract:** A promising technique of producing hydrogen uses *Chlamydomonas reinhardtii* algae. There are many technical challenges preventing the large-scale use of this method. This project investigates the optimal conditions for sustaining algae hydrogen production. Sulphur-free and copper-containing bioreactors were developed and compared under various conditions. The results indicated that, under optimized conditions, *C. reinhardtii* algae can be used to produce hydrogen in an effective and

#### Biography

Moaaz comes from Regina, Saskatchewan and attends Regina Huda School. He is currently in grade eleven, and is highly active at his school. He has interests in math, science, and computer programming. He participates in many sports, debate, and extra-curricular activities at his school. He enjoys reading and writing, and currently serves as the editor of his school's student newspaper. In the future, Moaaz wishes to pursue a career in medicine or engineering.

#### Awards

#### Value

The Manning Innovation Achievement Award Sponsor: Ernest C. Manning Awards Foundation	\$500
Excellence Award - Senior - 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
University of Ottawa Entrance Scholarship Senior Bronze Medallist - \$1000 Entrance Scholarship Sponsor: University of Ottawa	\$1 000
<b>Total</b>	<b>\$2 800</b>