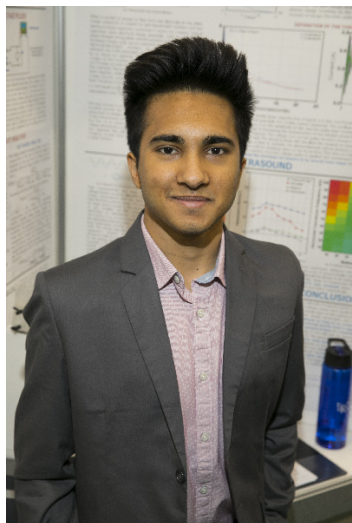


## CWSF 2017 - Regina, Saskatchewan



### Dhrumil Shah

#### Enhancing Electrolysis: Discovering the Separation of the Faradic Currents

**Challenge:** Energy

**Category:** Senior

**Region:** Wood Buffalo

**City:** Fort McMurray, AB

**School:** Westwood Community High School

**Abstract:** Hydrogen has been called 'the energy carrier of the future', and it can be produced in a clean manner using electrolysis. Unfortunately, electrolysis is highly inefficient. In this study, inductive reactive voltage pulse were supplied to an electrolyzer in an effort to observe the behavior of the electric double layer interface and separate the faradic currents for the first time ever in electrolysis.

#### Biography

I am currently 17 years old, and I attend Westwood High School, which is located in Fort McMurray, Alberta. Canadian restaurants waste 600,000 tonnes of edible food each year - less than half of the food wasted in Canada would provide enough to alleviate the world from food poverty. This is largely due to the fact that most restaurants are required to throw away unsold food, which still of good quality, every single day. I'm developing an application with my team that will allow users to purchase discounted 'leftovers' from restaurants. The app allows restaurants to list their unsold food inventory, and users can buy it directly from their devices at a 50-80% discount. I'm working closely with potential vendors to optimize the logistics of the service before its release. Furthermore, I strongly believe that the single most prominent issue on our planet is energy poverty. With cheap and abundant energy, we can solve hunger using optimized greenhouses and better farming; we can solve water shortage by using cost-effective desalination systems. Hydrogen has potential to be the solution to this issue as it really is a "fuel of the future"; hence, I'm extremely passionate about my hydrogen production research.

#### Awards

#### Value

Youth Can Innovate Awards - Senior Sponsor: The Gwyn Morgan and Patricia Trottier Foundation	\$1 000
Excellence Award - Senior - Silver Medal Sponsor: Youth Science Canada	
Dalhousie University Faculty of Science Entrance Scholarship Senior Silver Medallist - \$2500 Entrance Scholarship Sponsor: Dalhousie University, Faculty of Science	\$2 500
UBC Science (Vancouver) Entrance Award Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: The University of British Columbia (Vancouver)	\$2 000
University of Ottawa Entrance Scholarship Senior Silver Medallist - \$2000 Entrance Scholarship Sponsor: University of Ottawa	\$2 000
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
<b>Total</b>	<b>\$9 500</b>