

# CWSF 2018 - Ottawa, Ontario



## Jodh Singh Nahal

### Generate Bioenergy & Simultaneously Treat Wastewater with MFCs: A Novel Approach

**Challenge:** Energy

**Category:** Junior

**Region:** Cariboo Mainline

**City:** Kamloops, BC

**School:** Sa-hali Secondary

**Abstract:** There are many shortcomings in the current MFC research studies; I designed a novel approach analyzing 6 actual wastewaters' quality parameters: COD, TSS, TN, TP, pH, and conductivity, for the dual purpose of treating wastewater and generating bio-electricity simultaneously without pollution with MFCs. Also, built two different wastewater treatment systems: with-and-without MFCs, to actually treat real kitchen wastewater for comparative analysis and to stop eutrophication.

#### Biography

I'm Jodh Singh Nahal, a grade 8 student. I love science, math and soccer. In grade 4, I ranked #1 in Canada in a national-level math contest: Mathematica Centrum Byron-Germain. I scored 100% and won the top medal. I was the only one from BC who made it to the nationals and became the Canadian champion. I made news on the front full-page of the newspaper- Kamloops This Week. In each grade after that, I won several awards in different math competitions. At the regional science-fair, in grade 6, I won two best-category awards and a cash-prize; in grade 7, I won four best-category awards and two cash-prizes. It's my second consecutive year to the CWSF, and winning a silver medal excellence award at CWSF in Regina was very motivating. I play select soccer for four years now, and got 'MVP of the tournament' medal. I also play basketball for my school-team, and also have achievements in running at the district track and fields. I choose this project because I'm so inspired by the fact that bio-energy can be produced from any organic waste. I plan to further investigate other potential applications of MFCs. To others, I would say work-hard.

#### Awards

#### Value

Excellence Award - Junior - Silver Medal Sponsor: Youth Science Canada	
Challenge Award - Energy - Junior Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
<b>Total</b>	<b>\$2 000</b>