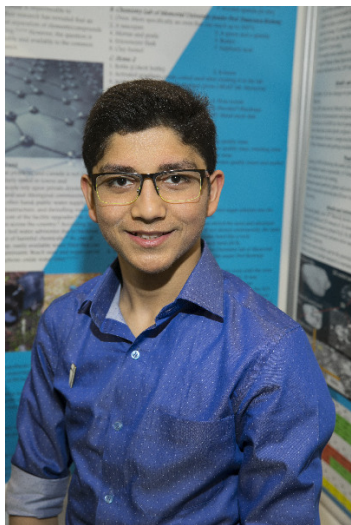


# CWSF 2017 - Regina, Saskatchewan



## Aaron Sarkar

### Evaluating the Effectiveness & Efficiency of a Graphene-Oxide Filtration System

**Challenge:** Environment

**Category:** Intermediate

**Region:** Eastern Newfoundland

**City:** St. John's, NL

**School:** MacDonald Drive Junior High School

**Abstract:** A Graphene-Oxide Filtration System (GOFs) was created to serve rural and Aboriginal areas of Canada. Graphene-Oxide was produced from sand and sugar, then activated by sulfuric acid and heat. The GOFs effectively filtered all major contaminants present in water. However, due to partially varnished Graphene-oxide coated sand, there was leeching of some heavy metals coming from sand particles addressing the major issue of quality assurance.

#### Biography

Hello my name is Aaron Sarkar and I am a grade 9 student at Macdonald Drive Junior High, St. John's, NL. The inspiration for my project seeded from reading multiple articles on graphene a few years ago. I had always been fascinated by this material since it was a super conductor but at the same time only one atom thick yet still the strongest material in the world. I had always wanted my own graphene but never got it. So, when I read an article on graphene being a potentially great water filter, I jumped at the opportunity to make a graphene filtration system by making it from scratch. My plans for further investigation is to develop a machine that can make activated graphene-oxide coated sand effectively and efficiently for water filtration while being cheap and reliable. I also want to promote it to the Aboriginal communities in Canada and developing countries. If I was to give advice to a student wanting to do a science fair project, I would say remember to always be inspired by something that you love and incorporate it into science and remember to always be original and innovative in anything you do.

#### Awards

#### Value

Excellence Award - Intermediate - Silver Medal Sponsor: Youth Science Canada	
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 000