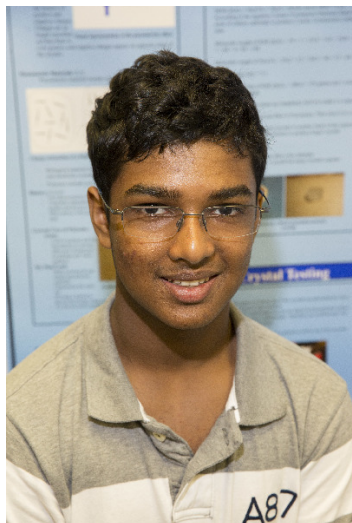


## CWSF 2014 - Windsor, Ontario



### Tahmid Khan

#### Exploring Piezoelectricity

**Challenge:** Innovation

**Category:** Junior

**Region:** Calgary Youth

**City:** Calgary, AB

**School:** Queen Elizabeth Junior Senior High School

**Abstract:** This project synthesized a piezoelectric material;  $\text{KNaC}_4\text{H}_4\text{O}_6 \cdot 4\text{H}_2\text{O}$ . Oscilloscopic study showed sine waves. Linear relationship in V-R plot, and constant  $\rho$  at varying resistance established this material to be a current source generating AC. An electrical circuit was designed consisting of a bridge rectifier, capacitor, switch, and a LED to harvest electrical energy. Following this, a nine crystal cell was designed to increase the output.

#### Biography

My name is Tahmid A. Khan. I attend Queen Elizabeth High School and I am currently in grade 8. I enjoy school very much and I have a personal interest in science. As a student I work extremely hard and strive to get good grades but as a kid, I enjoy leisure activities such as fishing and biking. In previous years, I have attended the Calgary Youth Science Fair with several projects relating to clean energy. My current project, Exploring Piezoelectricity, is no different as it focuses on generating green, environmentally friendly energy. For this project in particular, I focused on creating energy from what we already do without having to do extra work. This led me to the new and rather undeveloped concept of generating power from piezoelectricity. This project itself is not the end. Personally, I hope to develop this technology to a point where I can see people actually using piezoelectric devices.

#### Awards

#### Value

Excellence Award - Junior - Silver Medal Sponsor: Youth Science Canada	\$300
Western University Scholarship Silver Medallist - \$2000 Entrance Scholarship Sponsor: Western University	\$2 000
Total	\$2 300