CWSF 2016 - Montreal, Quebec

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Gas Sensor Applications with Photonic Crystal Fiber&Carbon Dioxide Sensor Design

Challenge: International
Category: Senior
Region: Turkey
City: Izmir,
School:

Abstract: In my project I designed a gas sensor system. For that I used photonic crystal fiber (PCF), spectrometer and computer. Since PCF is used to transmit light and has air holes in its cladding, when a gas enters the medium it fills the holes and changes light's spectrum. By observing the changes, such as absorption peaks, I can detect which gas has entered the system.

Biography

Especially after middle school (after 6th grade) I became intrested in science and maths. I have begun doing projects in 8th grade and completed 3 of them. I wanted to do something about harmful gases since air pollution and gas poisoning are facts and cause deaths. I started this project on 10th grade after a long period of making a literature review and following the latest developments and decided to use photonic crystal fiber. It is a new material and not many researches were done about gas sensor applications of it. I also would like to apply my system in biomedical areas, such as diagnosis studies by measuring the amounts of breath gases of the patient. But while I can detect gas entering the system, I can't determine the exact amount of gas inside the system. As a first step, I've done calibration studies but still I need to measure the exact amount for that. Doing projects is like the threshold matter for everything. Especially if you want to do something academically, don't stop and start showing yourself you actually can do it. Even if you can't win anything you will gain so much from your experiences and improve yourself.

Awards	Value
Gold Medal - International Sponsor: Youth Science Canada	
Total	$0