**Contamination Detection System (CO & CO2)**

Mohammed Al-Osaimi, Mohammed Al-Otaibi, Alwaleed Al-Otaibi, Sultan Al-Shaibani, Abdullah Abulied,M.Rizwan Jameel Quereshi, Fazal Qudus Khan

Faculty of computing and Information Technology, King Abdul-Aziz University, Jeddah, Saudi Arabia

[mohammed\_4246@hotmail.com](mailto:mohammed_4246@hotmail.com), [mr.m7md@hotmail.it](mailto:mr.m7md@hotmail.it), [al\_waleed732@hotmail.com](mailto:al_waleed732@hotmail.com), [sl6an\_al3taibi@hotmail.com](mailto:sl6an_al3taibi@hotmail.com), [abuleid@hotmail.com](mailto:abuleid@hotmail.com), [anriz@hotmail.com](mailto:anriz@hotmail.com), [fazalqudus@hotmail.com](mailto:fazalqudus@hotmail.com), [fbajaber.ac@gmail.com](mailto:fbajaber.ac@gmail.com)

Faculty of Computing and Information Technology, King Abdul-Aziz University, Jeddah, Saudi Arabia

Our responsibility and duty towards society require us to participate in solving problems that we are facing during our daily life. From that perspective, we drove our project idea to help society avoiding the harmful effect of Carbon Monoxide (CO) and Carbon Dioxide (CO2) on the human health. We have searched about health problem that caused by CO and CO2 gasses. Here are some of those problems such as asphyxiation and toxicity. For example, if the ratio of toxicity reaches to 5% that will affect and motivate the respiratory center and if it reaches to 8% it will affect the vision, hand shaking only after incurring to these gases for 5-10 minute, brain acidity and stimulus fear behavior.

Regarding existing solutions, we found a similar research that used an infrared CO2 gas detector in the water. We found that this solution is insufficient today since infrared light has a limited range and it cannot penetrate walls.

Our idea is to implement a wireless sensor network that detects the ratio of CO and CO2 gasses to notify people about places that have a high ratio of these gasses. These ratios of both gasses are calculated during different times to generate an accurate report about the percentage of these gasses during a certain period of time. We will distribute multiple sensors within one area. These sensors will gather the value of CO and CO2 in the air. The data are sent to the base station for processing. The base station will receive the data from multiple sensors to store it in the database for later processing. These data will be retrieved for processing to generate accurate report of the percentage of these gasses in the air. Each sensor has its own Global Positioning System (GPS) module to locate the place of contamination exactly. We will add a feature that help people to be notified against placed that are contaminated with Co and CO2. The user should register in our system to get advantage of this feature. After registration, the user should select the place of interest (A place that he wants to be notified if it is contaminated). Users can be notified either by Short Message Service (SMS) or Email.



• **References:**

[1]. News Medical [14 Dec 2011]:

<http://goo.gl/kDDtG>

[2]. CO2 Extraction for Allan Baumgartner [24 Jun 2011]:

<http://goo.gl/xAe51>

[3]. Handheld Infrared CO2 Gas Detector [14 Dec 2011]:

<http://goo.gl/vwUOZ> , <http://goo.gl/BAXry>.