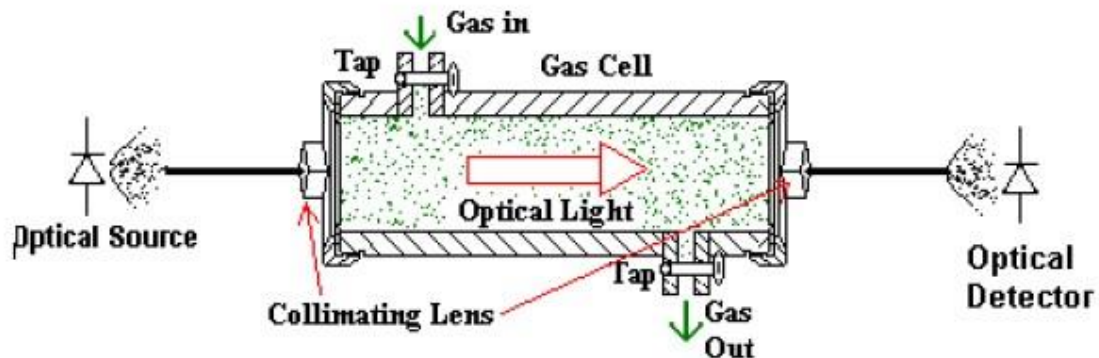


## Overview



The product is an optical based gas detector. There are no consumable parts. Each sensor can be designed to detect either a single gas or multiple gases, once the gasses to be detected are specified in advance at the design stage. For example gas sensors have been developed for SO<sub>2</sub>, NO, NO<sub>2</sub>, CO<sub>2</sub> etc.

## Technology

The sensing technology is based on the following techniques depending on the gasses being detected:

- i) Ultra Violet (UV) Differential Optical Absorption Spectroscopy (DOAS)
- ii) Infrared Differential Optical Absorption Spectroscopy

These approaches allow a high level of detection sensitivity (single ppm) to the particular gas species being detected. Light from the input fibre is passed into the test chamber where it comes in full contact with the test species. The test species (a gas) attenuates the optical light at various wavelengths as the light propagates through the test chamber. The level of attenuation at a particular frequency, which is specific to the gas being detected, provides the data necessary to determine the level of concentration of the particular gas being detected. The sensor is expected to have a long life. Typical lifespan of LED's and photodiodes run from 35,000 hrs to 50,000 hrs.

## Commercial Opportunity

Potential markets include: exhaust gas sensing; detection of aesthetic gasses; detection of oxygen and carbon dioxide levels in SCUBA diving equipment; ventilators, industrial gas leak detectors; etc. The knowhow is available for the detection of most (virtually all) gasses.

This opportunity is available for licensing and collaboration.

## Contact

John Gleeson  
Technical Transfer Office  
University of Limerick  
Limerick  
Ireland  
+353-(0)61-234683  
e: [john.gleeson@ul.ie](mailto:john.gleeson@ul.ie)