

Interferometric Chemical Sensor Array

Researchers at the University of South Florida have developed a Micro-Optical Electro-Mechanical based Interferometer Optical Bench System called 'MIOBS'. This device is designed to be a self-contained optical bench.

Interferometry is an invaluable scientific measurement tool that is used in many precision sensing applications including, but not limited to, physical signature identification of gases, aerosols, and liquids.

USF researchers have integrated an interferometer into a Micro-Optical Electro-Mechanical system to create an optical bench system on a chip. It is also intended to be a lab-on-chip (LOC). The system is self contained on a chip with multiplexed optical path sensors. The sensing structures consist of laser sources, semiconductor photo detectors, refractive/reflective optical elements, and specialized optical transmission paths.

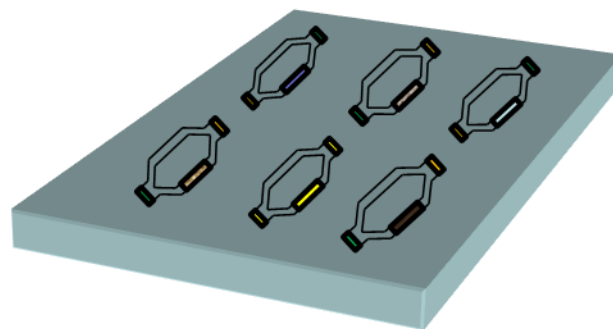
This invention is a portable device designed to quickly detect chemical signatures. Due to the device's sensitivity of unique chemical signatures various chemical agents present in the ambient environment are recognized and reported.

This technology is applicable to many industries such as engineering and sciences where there is a need to detect chemical species as well as biochemical/biological applications.

ADVANTAGES:

- **Micro/Nano scale integration leading to benefits in space, weight and power**
- **On-board conditioning and processing with element proximity**
- **Scale sizes approaching perceived 'ultimate' physical constraints such as the diffraction limit**

Interferometric Chemical Sensor US



MIOBS Sensor Array for Detecting and Analyzing Chem/Bio Signatures

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