

# HOLOGRAPHIC SENSOR FOR DETECTION OF ADULTERANTS IN ESSENTIAL OILS

**P** PATENTED TECHNOLOGY



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## ABSTRACT

The research group of Holography and Optical Processing of the University of Alicante has developed a holographic technique for the detection of adulterants in essential oils.

This technique is able to detect different types of adulterants qualitatively. In addition, a quantitative measurement of the degree of adulteration of an essential oil can also be performed by means of pre-calibration of the sensor for a particular adulterant. The sensor could be miniaturized and manufactured at a low cost compared to traditional methods of analysis such as gas chromatography and high performance liquid chromatography. The sensor can be used by unqualified personnel.

## TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

### MAIN ADVANTAGES OF THE TECHNOLOGY

- The detection of adulterants is made quickly, with the result of the analysis immediately.
- The sensor can work with samples of essential oil in the range of microliters.
- The sensor and the tests have a cost lower than conventional analysis methods: gas chromatography and high resolution liquid chromatography.
- The sensor can be manufactured in a portable device and can be miniaturized.
- It can be handled by personnel with a minimum training without the need to be an expert in chromatography.

### INNOVATIVE ASPECTS

- Ability to miniaturize, with the advantage of portability, small size and low cost.
- The tests require little time and results are obtained immediately.
- The sensor can detect different types of adulterants without having to be modified.
- The sensor can be calibrated for a specific adulterant, and a quantitative estimation of the adulteration of an essential oil can be made.

## MARKET APPLICATIONS

Food, flavours

Fragrance

Parapharmacy

Pharmacy and Cosmetics

COLLABORATION SOUGHT

Companies interested in acquiring this technology for commercial exploitation are sought by the following ideas of collaboration:

- Patent licensing agreements.
  - R & D projects to adapt the technology developed to the needs of the company.
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