

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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