

SIMPLE AND INNOVATIVE DETECTION METHOD FOR ACETIC ACID

DESCRIPTION OF THE TECHNOLOGY

Acetic acid is normally found mixed with other acidic substances. For this reason, it is important to develop a method that allows detecting only acetic acid and being able to quantify its concentration.

The technology developed by the researchers consists of the use of coordination compounds with metals to carry out this detection. This compound normally reacts with acetic acid changing its colour, making it a suitable compound for use as a detector.

The proposed method allows detecting acetic acid in any medium, whether in solution, in the gas phase,

in the solid phase or in any combination of these. Upon contact with the acid, a colour change occurs that can be detected visually or through optical means.

After its use, the active medium can be regenerated by a simple procedure and be available again for a new use.

This allows the creation of simple and intuitive detection devices, usable by non-experts and that can also be regenerated and reused.

MARKET APPLICATION SECTORS

The technology is useful as a contaminant detection system and in particular for the specific detection of acetic acid. This detection is very useful in closed spaces in work environments where the accumulation of this compound can be harmful to health.

It is also of great interest for the field of museology and heritage conservation since acetic acid can affect works of art.

The technology is useful for companies that need rapid and specific determinations of acetic acid in any type of substrate or in atmospheres in which acetic acid is a contaminant to be detected or quantified.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- Allows the specific detection of acetic acid and quantification of its concentration, discriminating it from other acidic compounds with which it may be mixed.
- Detection is fast, simple and intuitive, generating a visually appreciable colour change.
- Acetic acid can be detected in different media (in liquid, solid, gaseous phase or any combination of them).
- It is possible to regenerate the active detection medium through a simple process so it can be reused and therefore reduce the generation of consumables and waste.
- It has a lower cost compared to other methods currently used.
- Results are more reliable and simpler than electrochemical and enzymatic methods.
- It can be used by personnel without specialized training.

CURRENT STATE OF DEVELOPMENT

The research group has developed the detection procedure and has validated the analysis capacity in different scenarios. The technology can be adapted to different detection devices and materials depending on the needs of the users.

INTELLECTUAL PROPERTY RIGHTS

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This technology is under patent application*:

- *Title: "Procedimiento para la detección de ácido acético mediante la utilización de paladaciclos dinucleares"*
- *Application number: P202130895.*
- *Application date: 24th September, 2021.*

*Patent in co-ownership: University of Alicante (55%), Technical University of Cartagena (25%) and University of Murcia (20%)

COLABORATION SOUGHT

Companies performing electrolysis processes on metal surfaces interested in acquiring this technology for **commercial exploitation** through **licensing agreements** are sought.

RELATED IMAGES



Image 1: Device prototype

CONTACT

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