



BUSINESS AREAS
Area Infrastructures
COMSA INDUSTRIAL

DURATION
Febrero-2022
Diciembre 2022

BUDGET
15.000€

KEYWORDS
Peroxide, H₂O₂ Systems

COORDINATOR
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EXTERNAL FUNDING



Title of the project

Development of innovative solution for H₂O₂ removal in clean rooms

Acronym

PERIOXIDO

Content of the project

Controlling microbial load in GMP Production areas, R&D laboratories, animal research and hospitals is a **daily challenge**. Manual disinfection is a laborious and time-consuming task in these circumstances. Alternatively, **airborne disinfection** using nebulisation techniques allows overcoming many critical cleaning issues. H₂O₂ has become the **ideal disinfectant** as it decomposes into water (H₂O) and oxygen (O₂) over time and leaves no residues.

Disinfection has to be carried out daily, which means that the production rooms/laboratories are not available during the disinfection period. The **disinfection phases** can be summarised in three:

1. Reconditioning/Diffusion of VH202
2. Contact Phase
3. **Aeration Phase**

Some **preliminary channels of innovation** focus on reducing room downtime due to the Aeration Phase.

General objectives

This project will try to find a solution aimed at **minimising** the Aeration Phase duration. On the other hand, fixed and consumable elements will also be created in order to be placed in the filters of HVAC equipment in the rooms to eliminate H₂O₂ molecules. These systems must be impregnated with an active element (catalysts or absorbents) to reduce the peroxide concentration in the room. The possibility of incorporating ultraviolet light is also considered.

Project tasks

- I. Design/Material of the “honeycomb” support or similar, of the active element
- II. Design of the reactive chemical element and its impregnation in the support
- III. Fasteners and condensate collection elements
- IV. Study of the element’s behaviour in the HVAC system: pressure drop, flow rate, wear...
- V. Laboratory proof of concept
- VI. Compliance with FDA regulations
- VII. Possible “pilot” test

Results and conclusions