BREATHE FREE AIR OF COVID-19 IN INDOOR COMMON AREAS

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ABSTRACT

The *Institute of Chemical Process Engineering* of the University of Alicante has developed a system that allows the individual supply of disinfected air simultaneously to multiple users in closed spaces of common use.

This system is characterised by the fact that it can be easily installed in any place (classrooms, cinemas, theatres, means of transport, hospitals, offices, banks, etc.), it is very economical, it allows the safety distance to be reduced safely, and therefore, to complete the capacity at 100% with practically no risk of contagion by the inhalation of air contaminated with COVID-19 or other pathogens that are transmitted by air.

We are looking for companies interested in acquiring this system for commercial exploitation through utility model licensing agreements.

TECHNOLOGY ADVANTAGES AND INNOVATIVE ASPECTS

ADVANTAGES OF THE TECHNOLOGY

At present, there are no individual multi-purpose respirators on the market in common areas.

This innovative system has the following **advantages**:

1) It guarantees the arrival of disinfected air to one or multiple users simultaneously in closed spaces of common use.

2) Air exhaled by the users is also disinfected.

3) At the time, both air currents are perfectly separated, thus avoiding their accidental mixing.

4) Risk of contagion/infection through airborne pathogens are minimised and even prevented.

5) Easy construction and installation.

6) Low implementation cost.

7) It can be easily adapted to existing air circulation infrastructures.

8) It is very versatile: it is able to be implemented readly and quickly in numerous closed spaces of common use.

9) Air ducts can be arranged on the ceiling, walls or floor of the enclosure -adapting them to the intended use- without impeding visibility or the necessary mobility in the enclosure.

10) It allows 100% of the capacity to be completed in places where there are restrictions: theatres, cinemas, means of transport, etc.

11) It allows a reduction in the safety distance in closed areas, drastically minimising the risk of infection.

12) It allows a personalised dosage of medication in aerosol form to patients who do not require intubation.

13) It is suitable for other broader uses: e.g. blow cleaning.

INNOVATIVE ASPECTS OF THE TECHNOLOGY

It is the unique system currently available on the market that guarantees the individual supply of disinfected air in closed spaces of common use.

To achieve this, both the air supplied to the users and the air breathed by them are disinfected using different means, and both currents are channelled independently, so that mixing is avoided at all times, thus minimising risk of contagion/infection by COVID-19 (or other pathogens transmitted via aerosols) in the air exhaled by other users in closed, communal use areas.

MARKET APPLICATIONS

This ingenious system makes it possible to supply disinfected air at an individual level in closed spaces of common use, such as:

- **Classrooms**: infant, primary, secondary, university, libraries, seminars, workshops, computer rooms, laboratories...
- **Places of leisure**: cinemas, theatres, television studios and other cultural disciplines.
- **Means of transport**: planes, trains, buses, undergrounds, trams, taxis, ferries...
- **Hospitals**, operating rooms, waiting and consultation rooms, and other facilities.
- **Offices**, meeting rooms and boardrooms.
- Banks and branches.
- Fixed locations in supermarkets and shopping centres: cash registers.
- Public administration services.
- Private homes.

In this way, the **safety distance can be reduced**, and therefore, the **capacity can be increased to 100%** with a practically null risk of contagion by inhalation of contaminated air.

This is a simple way to guarantee a healthy microenvironment in closed spaces commonly used in the fight against COVID-19 and other infectious diseases transmitted by air in the form of aerosols.

COLLABORATION SOUGHT

Companies interested in acquiring this technology for commercial exploitation through utility model licensing agreements are sought.

Company profile sought:

- Manufacturers of respirators.
- Manufacturers of air disinfection systems.
- Manufacturers of masks.
- Manufacturers of personal protective equipment (PPE).
- Other related companies.