

2002 TAIWAN INTERNATIONAL SCIENCE FAIR

CATEGORY : Medicine and Health

PROJECT TITLE : Automatic Sterilization System for
Operating Rooms

SCHOOL : C.E.T.i.s. No. 156

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COUNTRY : Mexico

***ABSTRACT OF EXHIBIT
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***TITLE: Automatic Sterilization System for Operating Rooms
(ASSOR)***

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Automatic Sterilization System for Operating Rooms (ASSOR)

PRESENTATION

Purity and de-infection constitute along with sterilizing, the primary and most efficient elements to break up the epidemiological infection chain.

Hospital infection constitute an extraordinary and actual topic due to its frequency, seriousness and economic impact and it is conditioned by three principal factors: The resident patient, the pathological agent and the hospital environment itself.

Purity and de-infection are the proper tools to control environment-related factors in hospitals. All this makes necessary to have the knowledge and skills to develop new and superior systems which lead us to safer, confident and more efficient mechanisms to perform this task.

Our project is an in-development prototype to be applied in a hospitalary media, performing de-infection labor in a surgical area and other areas which require a totally clean atmosphere.

The main purpose in developing this project is to offer an environment-cleaning device in a hospital.

What is its importance?... mainly because already exist sterilizing systems for clothes, instruments and other materials which have to be in a sterile condition, but there are few and expensive systems that sterilize the air. This is our goal. Sterile condition in a medical area is such important and in which a patient's life could depend on.

Having this and other important factors into account led us to decide to develop a device to perform the previously explained task.

Common procedures to clean surgical areas in a hospital consist in sterilizing clothes, instruments, tables, lamps, etc., with vapor based methods, chlorine products, ethilic oxide, etc.

Procedures with our system consist in applying a gas-based product in the whole surgical room, so the whole area will be invaded by the gas and so, de-infect all hard access points.

DESCRIPTION.

The ***ASSOR*** is a device that allow to perform the sterilization function in hospital areas, the most important sectors of the hospital where it is required to implement this type of systems are the operating rooms, intensive cares, baby care, pathology, etc.

The principle of the present project is a system that enables or either disables a valve that allows the fluid of the product, antiseptic or sterilizing, inside the room to be sterilized.

The main application of this system is, after the manual cleansing of the room, in a control board, the procedure is turned on.

The **ASSOR** consists, in general, of an electro valve that controls the fluid of the antiseptic into the room, a fan system, the electronic control circuit for the application of the product; an electronic circuit to have a synchronized control of the system, and finally the product application in the target room.

CONCLUSION.

Thanks to the project to be developed, we will be able to have a new system of automatic sterilization by means of electronic mechanisms that eliminate the contamination possibilities in the operating rooms as well as the intervened patient's corporal cavities.

This system will be economic, effective and safe; applyable not only to the surgery area but also to the Pediatrics and baby care area; since in these areas a completely clean atmosphere is also required taking in consideration that it deals with infants.

In conclusion, this it is a sterilization system for areas you in which it is considered to have a totally clean and germ-free area and thanks to this mechanism, our purpose will be fulfilled.