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Instituto de Investigación  
Sanitaria La Fe

## **BIOSAW Coupons holder for microbial biofilms, and method for operating the biofilm reactor**

### **TECHNOLOGY DESCRIPTION**

The Health Research Institute La Fe and the University of Valencia have developed a prototype of modified coupon holders that can be used in any CDC Biofilm Reactor® (a Biosurface Technologies Corp. product) standard unit and which allows electricity to be carried to the biomaterial area where the biofilm is formed.

It is adapted to study the effect of surface acoustic waves (SAWs) generated on the surface of a piezoelectric material and its possible benefits in the eradication of the microbial biofilm.

It has the following characteristics:

- 1) Due to its dimensions, it can be used not only in any CDC Biofilm Reactor® unit but in other biological reactors.
- 2) It is capable of transmitting electrical signals from an external generator and the surface of the biomaterial under study.
- 3) It allows the generation of surface acoustic waves on a piezoelectric biomaterial that acts as a substrate for biofilm formation.
- 4) It withstands sterilization by autoclaving at 121°C, 20 minutes.

### **SECTORS OF BUSINESS APPLICATION**

Laboratories and Research centers (public and private) worldwide; specially health and industrial research centers that pursue the development of biofilm detection and eradication systems and use the CDC Biofilm Reactor® and other biological reactors as an in vitro model for their assays.

### **TECHNICAL ADVANTAGES AND BUSINESS BENEFITS**

This new model of coupons holder allows to substantially expand the number of possible biofilm tests, such as the identification of potentially preventive, diagnostic or therapeutic measures.

The standard CDC Biofilm Reactor® coupon holder does not allow the biofilm to be studied using tools that require the use of electricity. Being able to carry an electric impulse through the coupon holder enables to carry out studies that use surface acoustic waves, thermal energy and optical or electrochemical sensors, preserving the advantages offered by the commercial CDC Biofilm Reactor as a standardized method for the study of biofilm.

There is no company that sells a coupons holder for the CDC Biofilm Reactor® that allows to carry an electrical impulse to the surface the biofilm.

### **DEVELOPMENT STATE OF TECHNOLOGY**

At present, there is a prototype of coupon holders whose efficiency has been evaluated using CDC Biofilm Reactor® standard units. The efficacy of the prototype was validated in the transmission of surface acoustic waves from an electric energy source outside the biological reactor to the piezoelectric biomaterial that serves as a substrate for biofilm formation. The prototype allows to generate acoustic waves in the surface of the biomaterial in a wide range of frequencies and intensities maintaining a constant temperature.

### **INTELLECTUAL PROPERTY RIGHTS**

Patent pending number P201631733.

Application date: December 30<sup>th</sup>, 2016.

### **PARTNER SEARCHED**

A company interested in signing a license agreement for the device for its commercial exploitation.

### **IMAGES**



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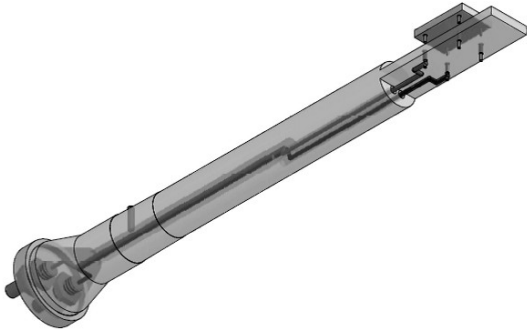


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### CONTACT INFORMATION

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