BIOMETRICA

«Wearable device for real-time detection of Sars-Cov2 from biological fluids»

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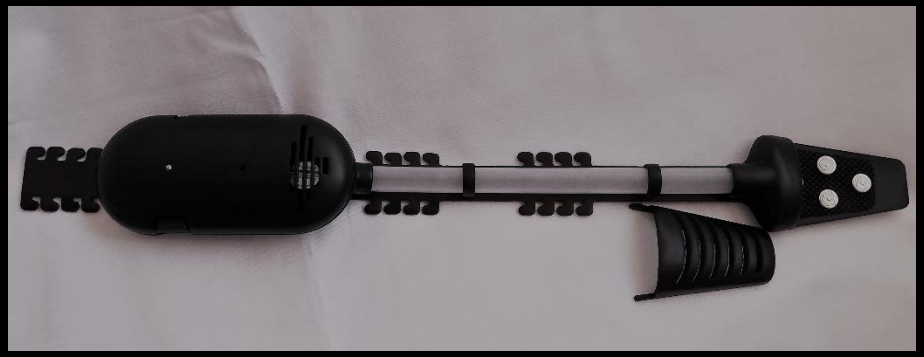
SMALL INTRODUCTION ABOUT BIOMETRICA

Biometrica is a technological company founded in 2018 that helps athletes to improve their wellbeing and performance through the monitoring of physiological parameters with a non-invasive method.
The innovative biosensor called SWEMAX allows the real-time analysis of human body through sweat.

SWEMAX is made up of a disposable biosensor, a wearable electronic device, a specially designed sleeveless garment, and an app for smartphones.

NEW REAL TIME DETECTION OF SARS-COV2

The development on **new techniques** capable to detect the presence of patogens through **continuous and non-invasive tests** is an essential factor in stopping the infection in advance and reducing its harmful effects.

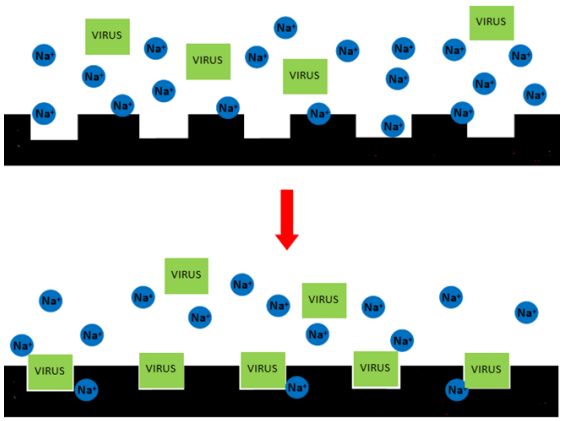


Biometrica developed an **innovative electrochemical biosensor**, made on **cellulosic material printed with a formulation containing selective nanoparticles capable of detecting in real time the presence of the Sars-Cov2 virus**.

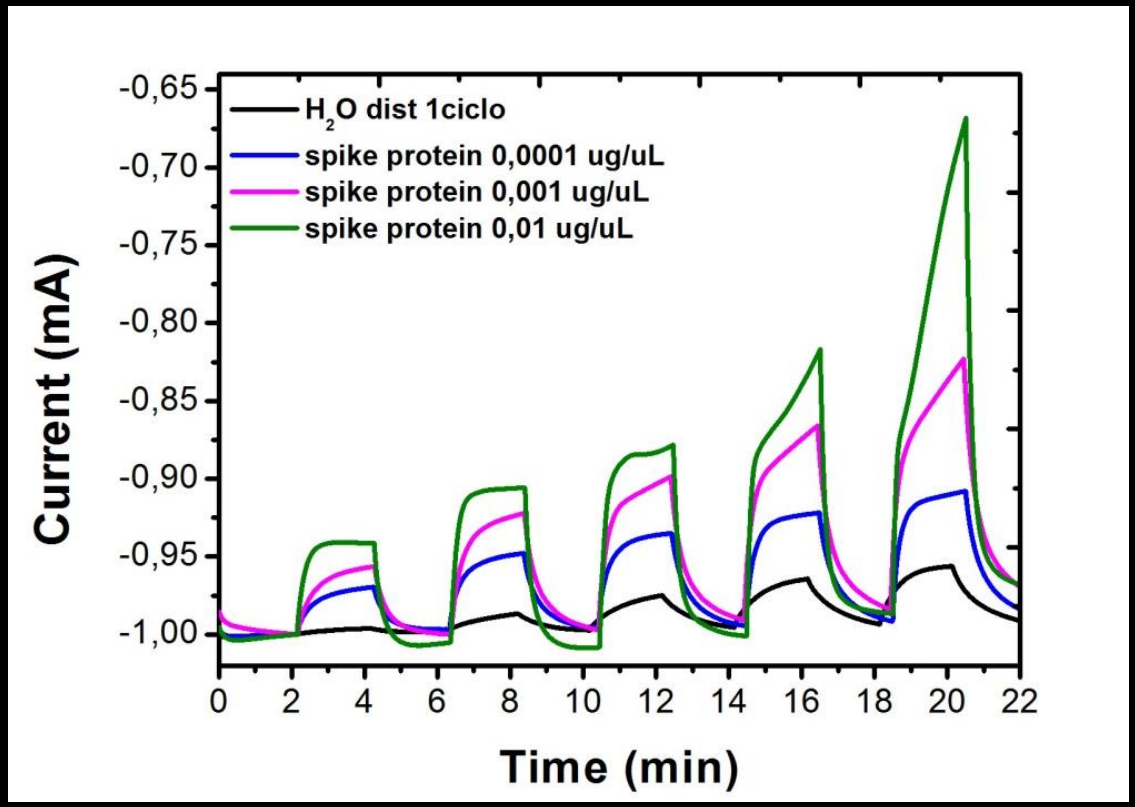
PATENTED ELECTROCHEMICAL BIOSENSOR

The specific functionalization of the patch, based on selective nanoparticles, make her selective to specific analytes, eg. the spike proteins of the Sars-Cov2 virus.

How does the detection work?



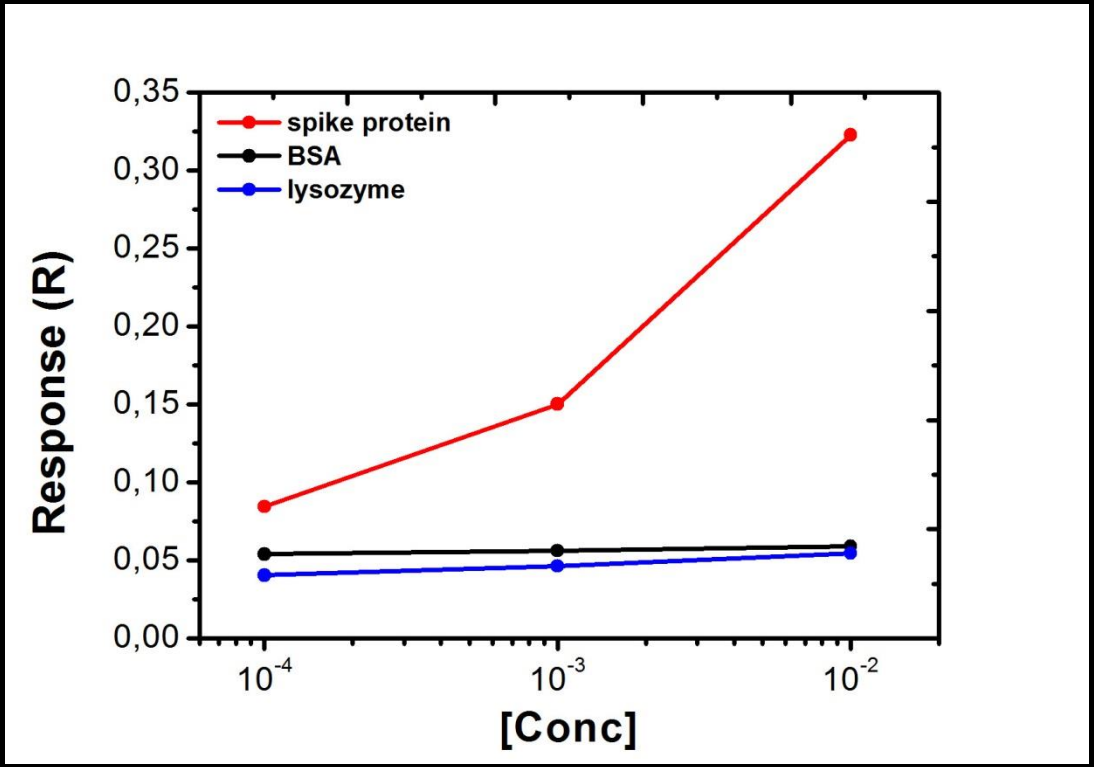
It works like a PUZZLE



The current variation of the biosensor is proportional to the concentration of the Sars-Cov2 spike protein.

HIGH-SELECTIVE ELECTROCHEMICAL BIOSENSOR

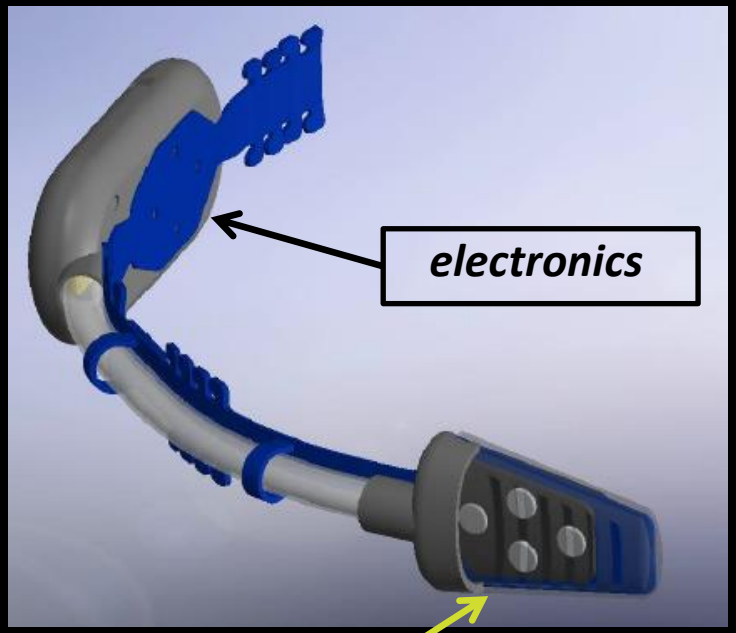
The biosensor was tested with interfering proteins usually present in saliva, e.g. lysozyme and Bovine serum (BS) albumin.

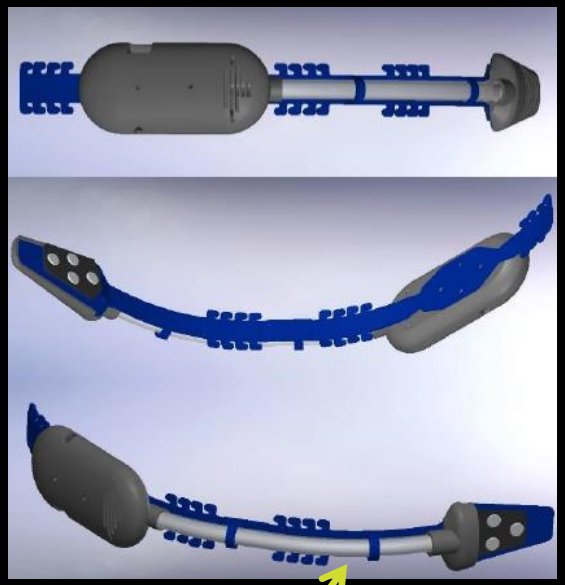


The graph shows that the biosensor, made on biocompatible cellulosic material, is fully capable to detect the presence of Sars-Cov2 in real time, also in presence of interfering proteins.

WEARABLE DEVICE FOR DETECTION OF SARS-COV2

The biosensor patches are connected to an electronic device, which acts as a reader during the use. The system has been developed in an "arch" architecture, that allows his installation on any PPE (FFP1, FFP2 and FFP3).





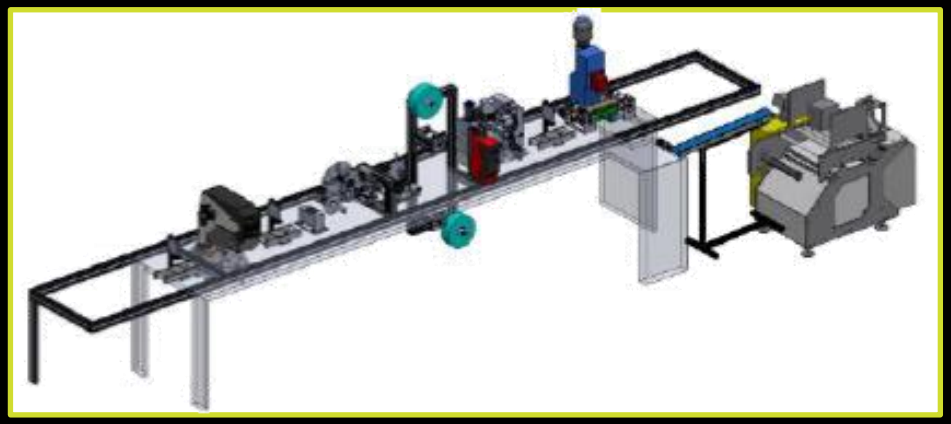
INSIDE THE ELECTRONIC DEVICE

The device consists in **plastic enclosure** made with generative design techniques and an **electronic with Bluetooth connectivity and an internal memory** to directly save the data when connection is not available.

The system has a threshold on the biosensor signal, which if exceeded, leads to the activation of a "**contagion alarm**".

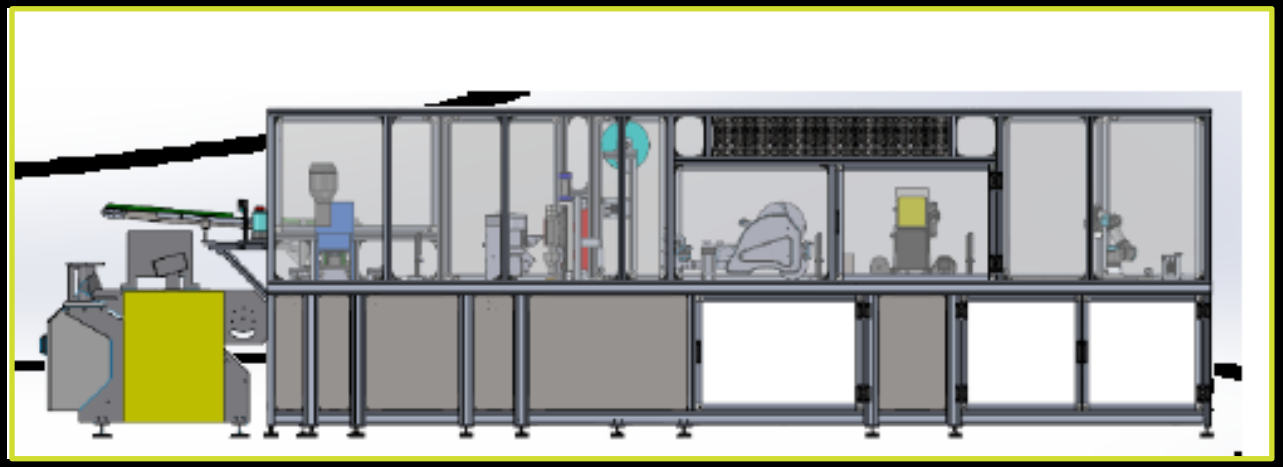
INDUSTRIAL SCALE-UP OF PRODUCTION

The production of the biosensor is carried out thanks to a special automatic tool that prints it directly on the cellulosic material, envelopes and seals every single patch.



Biomedical tested and certified 3D printing materials were used in the realization of the device.

Automation for continuous patch production.



Thanks for the attention!

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