

## **ELECTRONIC DEVICE TO BE EMBROIDERED ON A TEXTILE**

### **DESCRIPTION OF INVENTION**

This invention consists of an electronic device made up of a sequin 10 for application on textiles, where said sequin incorporates different electronic components, for example, digital sensors or LEDs. The object of the invention is to provide an electronic device for the materialization of an intelligent textile solution with the capacity to acquire environmental or user parameters, such as

temperature, humidity, air quality, light, etc., as well as textile solutions intelligent with the ability to illuminate by integrating the LEDs incorporated in the sequins of the electronic devices of the present invention.

### **BUSINESS APPLICATIONS**

This invention is useful for all sectors of application of textiles. Some of them are the following: doctors and hospitals, sports and leisure, cosmetics, hygiene, clothing, protective clothing, automotive, public transport, aeronautics, housing, textile architecture, sports surfaces, geotextiles, fashion.

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

The textiles in which the electronic device of this invention will be incorporated, will have the ability to acquire environmental or user parameters (temperature, humidity, air quality, luminosity) or the ability to light up due to the presence of, at least, one LED. The novel configuration and structure of this device makes it possible to incorporate a PCB board in it, which allows including complex circuits and a plurality of sensors for measuring parameters. Additionally, the electronic device 20 allows the incorporation of at least one RGB type LED, surpassing other known devices that only allow the incorporation of monochrome LEDs. All this in a device with an optimized size, not bulky, which allows to obtain a very comfortable and functional smart textile.

The obtained electronic device offers:

- a textile solution with the capacity to acquire environmental or user parameters, such as: temperature, humidity, air quality, luminosity, etc.
- a textile solution with the capacity to illuminate through the integration of LEDs in its own structure.
- these textile solutions are applicable in fields such as the automotive industry, clothing, architectural construction, advertising, home textiles, etc., being able to combine different devices with different electronic components to obtain new functionalities.
- the device of the invention does not require additional sheaths or cables, with the consequent saving of material, and presenting a lower weight and reduced complexity compared to other devices.

### **STATE OF TECHNOLOGY DEVELOPMENT**

Sequins based on FSD (Functional Sequin Device) technology are currently known, which have a circular shape and only allow the incorporation of an SMD component (Surface Mount Devices) or a monochromatic LED (light-emitting diode). In fact, there are no known FSD electronic sequins incorporating RGB (Red, Green, Blue) LEDs. The main disadvantage of the known FSD sequins is that, due to their structure and size, they do not allow the incorporation of more than one SMD component or one PCB (Printed Board Circuit), where it is possible to include one more circuit. complex and one or more sensors that allow the measurement of multiple parameters. For all of the above, the applicant of this patent detects the need to develop an electronic device that allows the inclusion of multiple sensors and/or RGB type LEDs, P202031281 12-21-2020 - 3 - to give rise to intelligent textiles and Functional devices capable of acquiring information on the environmental or user parameters and/or of providing luminous elements, and which in turn make it possible to incorporate the device into the textile or flexible substrate through an automated manufacturing process.

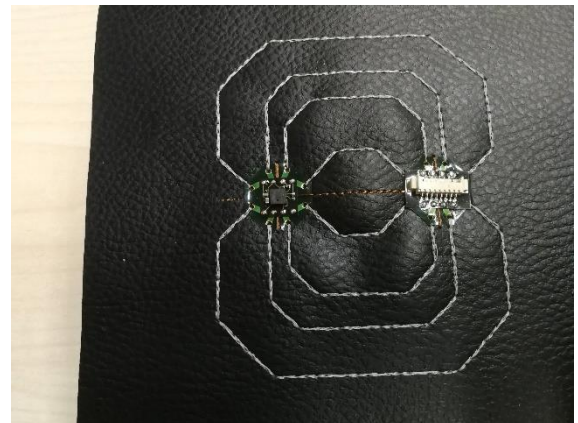
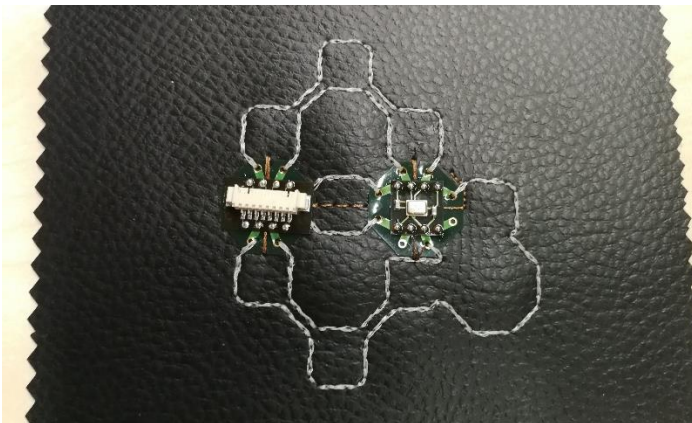


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### INDUSTRIAL PROPERTY RIGHTS

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### RELATED IMAGES



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