

SMART SENSORS BASED ON QR CODES

Technology for Licensing

Keywords:

Visual code, visual pattern, QR-Code, coding, decoding, error-correcting codes, static information, dynamic information, sensor, smart indicators, intelligent packaging.

Description:

It has been patented a process to create visual codes (e.g., QR code) made up of overlapping layers of information: a static information layer with a fixed graphic impression, and one or more dynamic information layers with a changing graphic impression.

For making smart sensors, the dynamic layers contain some chemical and/or biochemical compounds (such as enzymes or antibodies). These compounds produce colorimetric changes depending on the environmental conditions or the presence of external agents.

Upon optical recognition of the visual code, if a color change occurs in the dynamic layer, an error is generated that is detected by the error correction algorithm and interpreted with a predetermined meaning. In this way, the device makes it possible to interpret and provide information according to whether external chemical or biological agents are detected.

Actuación en el marco del Proyecto ILIBERIS: Actuaciones Singulares de Transferencia de Conocimiento en el CEI Biotic. Objetivo prioritario OP.01 "Potenciar la investigación, el desarrollo tecnológico y la innovación"



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A new visual code (QR, barcode, etc.) has been developed in which the information stored can vary dynamically depending on physicochemical parameters.

This device has application in different sectors of analysis and storage of information (in medicine to offer rapid diagnoses, in the food industry to assess the status and quality of the product, for color calibration in printing, among others).

Advantages and Benefits

» Compatible with common decoding

Visual codes maintain the size and appearance of a common visual code.

» The dynamic layer increases the capacity and functionality of the code

Common visual code decoding procedures have very rigid reading conditions. Patented devices have dynamic layers of information that modify the original code and are interpreted as useful information.

» Quick analysis of information

» Multiple applications

Because of the dynamic layer versatility, the device can be used for different purposes depending on its configuration. Among its applications are:

- Creation of smart food packaging
- Diagnosis of diseases
- Pregnancy test
- Colorimetric calibration

Patent status:

Spanish Patent application number: P201931128

Priority date: 18/12/2019

Spanish Patent Office Search Report (IET) available.

PCT application number: PCT/ES2020/070800

International filing date: 17/12/2020

International Search Report (ISR) available.

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