SMART CITY - STEP ON ME AND I'LL WARN YOU!

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ABSTRACT

Researchers from the Civil Engineering Department of the University of Alicante, in collaboration with the company ACCIONA Construcción S.A., have developed an innovative system that warns of the presence of an object and/or individual close to a certain area by emitting an acoustic and/or light signal. The device is capable of receiving an electrical signal from a conductive cement-based material which, when pressure is applied to it, the cement material itself acts as an electrical switch.

This innovative device has multiple applications in the intelligent sensorization of civil infrastructures, such as: lighting, traffic lights, etc., thus contributing to the sustainable development of the Smart City concept.

We are looking for companies interested in acquiring this technology for its commercial exploitation

ADVANTAGES AND INNOVATIVE ASPECTS

ADVANTAGES OF THE TECHNOLOGY

The main advantage of this invention is the practical implementation of the theoretical concepts based on the **perception of the deformation or piezoresistivity of cement-based materials with addition of carbonaceous materials with conductive properties**.

This innovative device is characterized because it is **sustainable and environmentally friendly**.

INNOVATIVE ASPECTS OF THE TECHNOLOGY

The object of the present invention combines previous knowledge regarding the manufacture of cement-based materials (capable of sensing their own deformation) with electronic devices capable of making feasible the practical use of this property.

To date, no device has been found on the market that can **transform the variation in the electrical properties of the material into a signal** capable of being implemented in a practical application.

MARKET APPLICATIONS

This innovative device allows multiple applications related to the development of **smart sensors in civil infrastructures**, such as:

- Switching on streetlights when vehicles or people pass by.
- Activating acoustic and/or light signals in the event of dangers (pedestrian crossings, over-heavy vehicles, etc.).
- Modifying the sequencing of traffic lights according to the flow of vehicles.

- Activate safety systems installed in traffic lanes.
- Other applications of interest....

Thanks to the development of electronic devices for the reception and transformation of the signal received as a result of the **variation in the electrical properties of the material**, it is possible to subsequently use it as an open/closed circuit in different practical applications.

These applications are included in the Smart City concept.

COLLABORATION SOUGHT

Companies interested in acquiring this technology for **commercial exploitation** through **utility model licensing agreements** are sought.

Company profile sought:

- Manufacturers of smart sensors.
- Manufacturers of multifunctional conductive cementitious materials