NEW METHOD TO QUANTIFY THE SELF-REPAIR OF POLYMERIC MATERIALS

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ABSTRACT

The **Adhesion and Adhesives Laboratory of the University of Alicante** has developed a new method (equipment and process) to determine the degree of self-repair and to monitor the kinetics of self-repair of **polymeric materials**. The new method also makes it possible to follow the self-repair process of composites, ceramic materials, materials based on cement, mortar or concrete, and textile materials.

This invention stands out for being a simple, fast and reproducible method, and allows several *in situ* measurements to be carried out on the same sample at different temperatures and with different geometry and size of the materials.

The group is looking for companies or institutions interested in acquiring this technology for commercial exploitation.

ADVANTAGES AND INNOVATIVE ASPECTS

MAIN ADVANTAGES OF THE TECHNOLOGY

The main advantages of this technology are as follows:

- **Simple** method
- **Fast** method
- **Efficient** method
- **Reproducible** method
- It does not require the application of external stimuli (heat, radiation or chemical reactions).
- **Several *in situ* measurements** can be performed on the same sample.
- The sample can be of **any geometry** and with a very wide range of **dimensions and thickness**.
- The sample can be heated to **temperatures above room temperature**.
- The stem and piercing element allow **360º** rotation.
- The gas flow output of the main body of the self-repair measuring equipment is continuously **monitored** by a flow sensor.

INNOVATIVE ASPECTS

This is the first method and measuring equipment that allows direct measurement of the degree of self-repair and/or monitoring of the kinetics of self-repair in materials. This invention represents a breakthrough in the development and implementation of this type of materials, with multiple applications, in society.

MARKET APPLICATIONS

It can be used in all fields where self-healing materials are used, e.g. in the **medical field, biomaterials, cosmetics, textiles, technology, coatings, adhesives, sealants or space.**

COLLABORATION SOUGHT

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