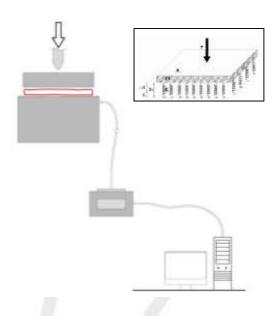# DEVICE AND METHOD FOR DETECTING THE STRUCTURAL INTEGRITY OF A SAMPLE OBJECT
An innovation in non-destructive tests

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Engineering
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Brief description

The major problem encountered in the application of polymer industrial products is the difficulty to model and effectively predict material performances and service life according to applied loads and operating environmental conditions. Furthermore, the presence of defects such as voids or inclusions created during manufacturing may affect the final performance.

The aim of this invention is to develop an innovative acoustic non-destructive technique, able to verify defects into composite laminates.

Innovative aspects and main advantages

Starting from the determination of the dynamic stiffness (spring behavior) the aim is to extend the application range of this technique and provide information on polymer composite internal structure.

The dynamic stiffness is based on the mass-spring effect. Hence, it could be possible to check the presence of defects within materials without using destructive tests time, speeding up the quality control time and extremely reducing costs.

Applications

The invention could be applied to quality control at the end of the production process as well as in situ consolidation and defects investigations.

Potential market

Target industries are polymers and polymer composites industries dealing with laminates or panels products as well as companies performing non-destructive tests.

Development status

The technique is ready and tested on polymer laminates; the development process on defect position identification is under evaluation. The next step concerns the scale-up of the process.