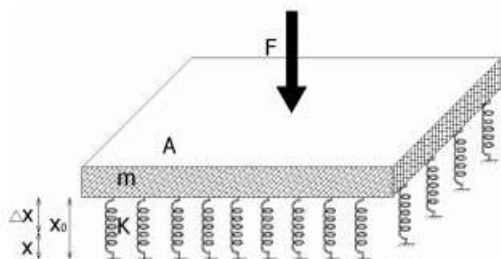




**UNIVERSITÀ  
DEGLI STUDI  
DI TRIESTE**

## **EXPERIMENTAL METHOD TO DETECT THE ELASTIC MODULUS OF OBJECTS, SAMPLES OR SEMI-WORKED PRODUCTS OF VARIOUS MATERIALS**

An innovation on materials testing



Category:

**Engineering**

Patent Ownership:

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### **Brief description**

A paramount issue encountered in the application of polymer industrial products is the difficulty to determine the mechanical properties and the Young's Modulus. In fact, polymers do not present a linear stress-strain trend and so it is very difficult to calculate the elastic modulus "E".

The aim of this invention concerns an experimental method to detect the elastic modulus "E" of objects such as, for example, consolidated polymers or other types of material used in the industrial field in general.

### **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 determine the elastic properties of the sample without invalidating it in any way. This method could be easily movable

and automated cheap, very quick and without production of harmful radiations.

### **Applications**

The invention could be applied to mechanical tests at the end of the production process as well laboratory tests and characterization of materials.

### **Potential market**

Polymers and polymer composites industries dealing with laminates, elastomers or panels products as well as companies performing materials characterization and testing.

### **Development status**

The technique is ready and tested on polymer laminates as well as elastomers. The next step concerns the scale-up of the process.