



Medical Devices

Wave ultrasonic transducer torque

A research group has developed a novel device using ultrasonic sensors related medical diagnostic ultrasound, elastographs.



Description

This research group has developed a new device based on ultrasound, particularly in piezoelectricity, for use in solid or cuasifluidos samples.

The invention comprises a transducer capable of generating an ultrasonic pulse which propagates the torque through a sample and is capable of acting as a receiver to collect the pulse distorted after passing through the sample, which comprises two or more piezoelectric elements arranged regularly (preferably equidistant) between two discs, preferably made of materials ceramic, so that each piezoelectric element is in contact with two electrodes of different loads distributed perpendicular to the polarization of said piezoelectric elements. Those electrodes with electrically excited by a power source generating pulses, common design ultrasound equipment.

Thus, after receiving an electric pulse creates a magnetic field which, in combination with the direction of polarization, generates an elastic movement.

Third, compared to other approaches for generating torsional waves, the device generates efficiently a wide range of higher frequencies.



Intellectual Property

This technology is protected by patent.



Aims

This research group is looking to establish a license agreement or agreement for public-private partnership for the development of technology.



Advantages

Among the main advantages of this device include, firstly, the propagation of torsional waves is governed primarily by the resistance, which is more sensitive to pathological changes, and therefore a good indicator of them.

Secondly, the design minimizes spurious waves and motion modes to get a more clear. Furthermore, low pressure waves are generated, which are more sensitive to the conditions of high pressure.



Classification

Area: Medical device