Technique to obtain a medical image from elastic properties of tissues

CSIC and the Polytechnic University of Valencia have developed a technique that substantially improves the medical image generated from the study of the elastic properties of soft tissues. This information allows a better medical diagnosis to be made and to detect possible abnormalities in the tissue that can develop as a result of pathology. In this way, changes in the elastic properties of tissues are associated with possible diseases, such as cancer.

Industrial partners dedicated to the development of medical imaging devices are being sought to collaborate through a patent licence agreement.

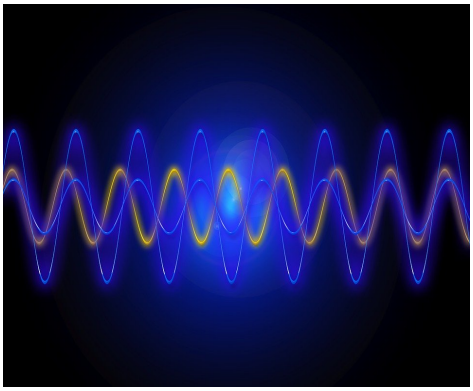
An offer for Patent Licensing

Improvement of the techniques used previously

The study of the elastic properties of tissues through different approaches has allowed it to be associated with different pathologies. But the techniques used had certain limitations, which prevented a detailed analysis of the tissue.

Through the use of this technique, more information on the tissue under study is obtained. The technique uses an ultrasonic vortex beam that generates transverse waves in the tissue, in this way the entire tissue can be studied.

On the other hand, it allows defining the excitation frequency and an increase in the wavelength, having the control of the study parameters to perfectly fit the type of tissue to be analyzed.



Certain pathologies, such as cancer, produce alterations in the elastic properties of tissues

Main innovations and advantages

- This technique allows obtaining information on the entire tissue under study, obtaining a more realistic image of tissue alterations.
- The new technique allows reducing the temperature increase caused in the tissue produced by the generated waves.
- It allows the evaluation of tissue anisotropy, as occurs in fibrous tissues.
- Generates quasi-omnidirectional transverse waves in the tissue, allowing a detailed analysis.
- Improves the signal-to-noise ratio of previous techniques.

Patent Status

Patent application filed in Europe and United States

For more information, please contact:

Marc Escamilla

Deputy Vice-Presidency for Knowledge Transfer

Spanish National Research Council (CSIC)

Tel.: (+34) 96 161 29 95

E-mail: m.escamilla@dicv.csic.es
comercializacion@csic.es