# Quantitative tissue elasticity measurements with focused ultrasound

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## Technology description

WO2014113442 )

## Publications

Shahmirzadi D, Hou GY, Chen J, Konofagou EE. "Ex Vivo characterization of canine liver tissue viscoelasticity after high-intensity focused ultrasound ablation." Ultrasound Med Biol. 2014 Feb;40(2): 341-50.

Hou GY, Luo J, Marquet F, Maleke C, Vappou J, Konofagou EE. "Performance assessment of HIFU lesion detection by harmonic motion imaging for focused ultrasound (HMIFU): a 3-D finite-element-based framework with experimental validation." Ultrasound Med Biol. 2011 Dec;37(12):2013-27.

## Application area

Aid in the diagnoses of many types of cancers

Monitor tumor sizes before and after treatments

Use in animal models to research pathologies that affect biological tissues

Monitor and observe changes orthopedic tissues

## Advantages

Allows for the quantitative measurement of Young's modulus (E).

A remote, non-invasive and non-destructive method for measuring tissue elasticity

Provides very high resolution (1mm)

## Institution

Columbia University

## Inventors

Elisa E. Konofagou

# 联系我们


叶先生

电 话：021-65679356

手 机：13414935137

邮 箱：yeyingsheng@zf-ym.com