One year Post-Doctoral Position at the Laboratory of Mechanics and Acoustics - LMA (France) on the project:

Quantitative Ultrasound Techniques for Classifying Liver Fibrosis

A post-doctoral position is available for one year starting at the beginning of 2014 at the Laboratory of Mechanics and Acoustics LMA-CNRS UPR 7051, a CNRS laboratory based in Marseille in the South of France.

Description: The candidate will work on a collaborative project between LMA (Laboratory of Mechanics and Acoustics, Marseille) and CREATIS (Medical Imaging Research Center, Lyon) that aims at characterizing liver tissue with innovative probes and Quantitative UltraSound (QUS) techniques. The QUS technique developed by the LMA aims to estimate cellular structures (such as the cell size and concentration) in order to differentiate between healthy and diseased tissue and to follow treatment. The candidate will develop the QUS techniques to classify liver fibrosis (i.e. from fibrosis to evolved cirrhosis) with a dedicated CMUT (Capacitive Micromachined Ultrasonic Transducers) probe. This study will be led on a small animal experiment. Another experimental study will be also conducted on tissue-mimicking phantoms to evaluate the potential of the CMUT probes in comparison with the piezo-electric probes for QUS techniques.

Profile: Candidates should be motivated by experimental investigations. Candidates should have a PhD degree in acoustics, physics, biomedical engineering, medical physics or a closely related field. The position is funded for 1 years and the net salary is approximately 25 000 euros (33 800 US dollars) per year.
Starting date: between January and April 2014

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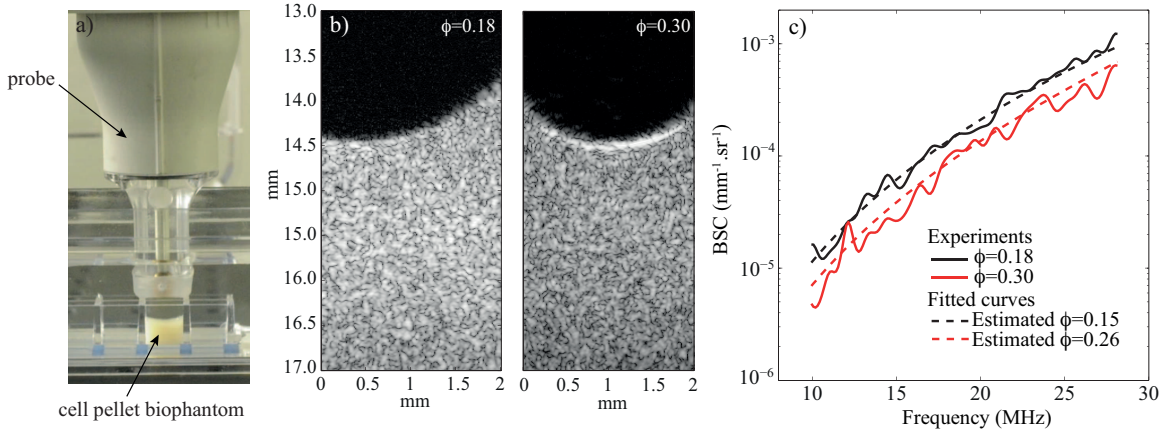

Figure 1: Example on an experimental set-up for the US characterization on concentrated cell pellet biophantoms. a) and b) Measurements on concentrated cell pellet biophantoms with a Visualsonics high-frequency US device. c) Measured backscatter coefficients on the cell pellet biophantoms and corresponding fitted curves with the Structure Factor Model to estimate cellular structures.

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- FRANCESCHINI E., METZGER B. AND CLOUTIER G. 2011 Forward problem study of an effective medium model for ultrasound blood characterization. *IEEE Trans. on Ultrason., Ferroelect., Freq. Contr.* **58**, 2668-2679.
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