

POSTDOCTORAL RESEARCH STAY

Two-years contract for a PhD graduate at the Institute of Physical and Information Technologies (CSIC), Spain.

Scientific cooperation CSIC (Spain)-Ukraine

The following job offer belongs to the CSIC International Scientific Cooperation Programme with Ukraine.

Profile of the contract

We are looking for a Ukrainian researcher with PhD degree, who will participate in the development and fine tuning of a high-resolution ultrasound imaging system and will carry out the experimental work related to the use of such technology. The ideal professional profile of the candidate is:

- Physicist, mechanical, electrical or biomedical engineer with **PhD degree**.
- Skills on instrumentation development, mechanical characterization of materials and programming (experience with MATLAB will be welcome).
- Open mind to acquire the multidisciplinary formation needed to combine instrumentation development, signal treatment and biological sample handling skills

Contract conditions

Two year contract (Gross salary 39.133,63€/year).

Incorporation between september and december 2022.

Project Scope

Biomedical imaging instrumentation plays a fundamental role in the investigation and diagnosis of biological processes and diseases. Among different biomedical imaging techniques, ultrasound technologies are able to provide non-invasive and compact devices which can be used to obtain both qualitative and quantitative information of tissues. Recent advances on quantitative ultrasound are focused on the development of new signal treatment algorithms which are providing quantitative biomarkers for different pathologies. More concretely, the mechanical properties of biological fluids and tissues can be interrogated through the analysis of tissue reflectivity, absorption spectrum and texture parameters. These are basic characteristics for cellular interaction processes and disease development. The present project aims to investigate biological formations constituted by eukaryotic cells through the development of an ultrasound scanning probe based on a wideband (15-70MHz) focalized transducer. The development of such analysis techniques would be applied as diagnostic tools and also as a quality control technique for tissue engineering science. The person hired would be involved in the following tasks:

1. Development of a high frequency (15-70MHz) ultrasound portable probe based on a 2D scanning micromechanism.
2. Characterization of cell formations using the probe. (Cell monolayers and dilute cell suspensions).

Contact

Interested researchers, please send an e-mail as soon as possible explaining your motivation for the job and enclosing your curriculum vitae to Dr. Luis Elvira (luis.elvira@csic.es).