

LabView developer for control of research instrumentation

We are recruiting a motivated **Software/Electronic Engineer** with experience in **LabView architecture** to join a research group specialized in **nanotechnology and biophysics** for the European Research Council (ERC) Consolidator grant project “**MechaDynA - Multi-scale mechanics of dynamic leukocyte adhesion**” starting in September 2018.

Project

The project proposes to develop and apply high-speed atomic force microscopy (HS-AFM^{1,2}) coupled to an optical microscope (OM) to allow force measurements on living leukocytes. You will develop the software required to control the coupled HS-AFM and OM system. HS-AFM is a state-of-the-art nanotool that allows scanning the surface of biological samples with nanometre resolution and apply forces with piconewton sensitivity. AFM is a widely used technique in research and industry to characterize the surface of materials, from microelectronics to biological samples.

The developed software will control the CMOS camera and laser sources of the OM and simultaneously control the piezoelectric elements and photodetectors of the HS-AFM system. You will join a small group of researchers specialized in HS-AFM and develop the software under continuous interaction with the team.

Primary Function of Position:

- You will develop, implement and verify new software/platform to control a state-of-the-art nanotool combined with an optical microscope
- You will develop code to control the instrument using **FPGA technology** on a PXI system. This includes control of multiple coordinated axis of motion of the HS-AFM, photodetectors, and laser and CMOS camera control of the OM
- Develop control algorithms
- You will continuously collaborate with researchers to prototype hardware and software solutions, experiments and concepts that advance the entire project
- You will provide programming and device setup and troubleshooting support for the planning and execution of cutting-edge research
- You will ensure that the code is robust, thoroughly tested, meets requirements and allows flexibility to adapt to a continuously developing field

Candidate

You will integrate a interdisciplinary and international research team and will work in close collaboration with researchers to develop scientific instrumentation. The candidate should have experience in LabView and LabView FPGA for instrumentation control. Demonstrated knowledge of basic electronics and physics is required. Knowledge of Python, Matlab, Igor Pro, C++ is important. Experience in AFM or another nanotechnology will be highly valued. Good communication skills in English are essential.

Qualifications:

- Master's degree in **electronic/telecommunications engineering, computer science** or similar
- Experience required in software development for instrumentation control from concept to production
- Proficiency in **LabView** and **LabView FPGA**
- Good experience in **Data Acquisition**, National Instruments hardware (NI DAQ, NI SCOPE, PXI system), Sensors, actuators control, debugging, integration and testing
- Knowledge of **signal conditioning and processing** using NI LabVIEW functions
- Knowledge of **Matlab, Python, C++** and **Igor Pro**
- Strong understanding of robotics, nanotechnology and instrumentation control
- Good communication, documentation and organizational skills
- Demonstrated capacity for team working, objective accomplishment and scheduling
- **Excellent English** written and oral communications skills

Hosting group and working environment

The [force microscopy group](#) is an interdisciplinary and international group within the [LAI U1067](#) affiliated to **Aix Marseille Université, INSERM** and **CNRS**. The lab is located in the Luminy campus within the Calanques National Park in Marseille, France. You will have the option to attend **advanced programming courses** subsidized by the lab to complete/improve your programming skills. Participation in national/international **conferences** will be expected.

Application procedure

To take part in the selection process send your resume to felix.rico@inserm.fr.

There is no specific deadline. Selected applicants will be notified whether their application has been selected for further assessment and interview, either by personal visit or video conference.

Terms of salary and employment:

We propose a 1-year contract renewable. The terms of employment are set according to the prefixed table of wages and depend on professional experience.



This project has received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation programme (grant agreement No 772257).