

CALL FOR APPLICATIONS

One postdoctoral position

Postdoctoral position at Atomic Force for Biophysics, AF4B Lab, U1006, French National Health Institute INSERM, Aix-Marseille Université, Marseille

One postdoctoral position is available in molecular biology studies by Atomic Force Microscopy and High Speed Atomic Force Microscopy. The position is for 2 years (with possibility of extension), starting date upon agreement.

Job description

The postdoc project involves the use of high-speed atomic force microscopy to investigate at nanometer lateral scale and sub-second temporal resolution the biological membrane organization. The project will focus on *Salmonella* effector proteins structure and function linked to the formation of tubules (1) and will be performed in collaboration with the Centre d'Immunologie de Marseille-Luminy.

Scientific environment

Atomic Force for Biophysics AF4B Lab, U1006 offers an ambitious scientific environment, with many different nationalities represented. AF4B Lab is a research center located at the Campus of Aix-Marseille Université AMU of Marseille supported by the French National Health Institute INSERM and AMU aiming at the (i) discovery of the dynamics, diffusion, structure, interactions and supramolecular assembly of biological membrane constituents (2-6) and (ii) adhesion and mechanics of biomolecules and cells, using force spectroscopy methods with conventional and high-speed AFM. More info on <https://sites.google.com/view/fm4b-lab/home>

1. Schroeder et al. *Trends in Microbiology* 2011;19,6:268 / 2. Colom and Casuso et al. *Nature Communications*. 2013;4:2155 / 3. Casuso et al. *Nature Nanotechnology*. 2012 / 4. Munguira and Casuso et al. *ACS Nano*. 2016;10,2:2584 / 5. Rico et al. *Science*. 2013;8,342:741 / 6. Rigato et al. *ACS Nano*. 2015;9,6:5846

Qualifications

Highly motivated and ambitious candidates are encouraged to apply. It is required

- A PhD degree in biology, chemistry, pharmaceuticals or physics
- Relevant scientific experience supported by publication record
- Proven ability to present and publish research data
- Excellent English communication skills, both oral and written

In all cases, the ability to perform the job will be the primary consideration, and thus the AF4B Lab encourages everyone interested in this post to apply, regardless of personal background.

Terms of salary and employment:

The terms of employment are set according to the Inserm/ANR table of wages. Successful applicants will receive a salary around 2800 euros gross salary per month.

Application procedure

The application must be submitted in English to ignacio.casuso@inserm.fr, and must include the following:

*Curriculum vitae with a list of publications, a report on previous research undertaken, and the names, addresses and contact details of 2 referees

*Diplomas – all relevant certificates, including grades

*An outline of how you could contribute scientifically and intellectually to the research of the center (approximately 1 A4 page)

Deadline for application is April 1st, 2017.

After the expiry of the deadline for applications, the authorized all applicants are then notified whether their application has been selected for further assessment and interview either by personal visit or video chat.

The French Institute of Health and Medical Research (INSERM) (<http://english.inserm.fr/>) was founded in 1964, and is a public scientific and technological institute with more than 5000 permanent employees and 2000+ permanent researchers. INSERM hosts large numbers of international researchers and having strong links with European industry. Also, it pursues an active international program that stimulates collaborations and hosting of international researchers (www.inserm.fr/qu-est-ce-que-l-inserm/politique-internationale). INSERM provides training in all scientific disciplines, and the labs have even the possibility to ask the national directory to establish training classes when novel needs for learning novel technologies, programming languages etc.

Aix-Marseille University with his 117 research units and 130 research facilities provides a major contribution to the knowledge economy and the dissemination of knowledge in collaboration with the major French research institutions. It has more than 4000 professors and researchers, and 3000+ PhD students.

The host lab has three different AFM setups (ranging from high-speed AFM prototypes to cellular AFMs coupled to optical microscopes) and all the basic biochemical and cell culture equipment provides an excellent platform to develop the project.

1. Schroeder N, Mota LJ, Meresse S. Salmonella-induced tubular networks. Trends in Microbiology. 2011;19(6):268-77.
2. Colom A, Casuso I, Rico F, Scheuring S. A hybrid high-speed atomic force-optical microscope for visualizing single membrane proteins on eukaryotic cells. Nature Communications. 2013;4.

3. Casuso I, Khao J, Chami M, Paul-Gilloteaux P, Husain M, Duneau JP, et al. Characterization of the motion of membrane proteins using high-speed atomic force microscopy. *Nature Nanotechnology*. 2012;7(8):525-9.
 4. Munguira I, Casuso I, Takahashi H, Rico F, Miyagi A, Chami M, et al. Glasslike Membrane Protein Diffusion in a Crowded Membrane. *ACS Nano*. 2016;10(2):2584-90.
 5. Rico F, Gonzalez L, Casuso I, Puig-Vidal M, Scheuring S. High-Speed Force Spectroscopy Unfolds Titin at the Velocity of Molecular Dynamics Simulations. *Science*. 2013;342(6159):741-3.
 6. Rigato A, Rico F, Eghiaian F, Piel M, Scheuring S. Atomic Force Microscopy Mechanical Mapping of Micropatterned Cells Shows Adhesion Geometry-Dependent Mechanical Response on Local and Global Scales. *ACS Nano*. 2015;9(6):5846-56.
- 