



FRANCE-BIOIMAGING

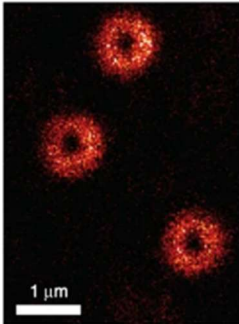
1 YEAR ENGINEER POSITION IN OPTICS/MICROSCOPY AT THE CENTRE DE BIOLOGIE STRUCTURALE, MONTPELLIER, FRANCE

Dr. Emmanuel Margeat

Head of the Integrative Biophysics of Membrane Team

<https://integrativebiophysicsofmembranes.wordpress.com/>

SCIENTIFIC CONTEXT



Masullo et al. Light Science & Applications (2022)

MINFLUX nanoscopy offers the highest resolution in photonic microscopy but its classical implementation requires expensive and complex instrumentation. For a simpler implementation, RASTMIN replaces the beam triangulation procedure of MINFLUX with beam raster scanning, achieving similar localization precision. p-MINFLUX uses interleaved laser pulses to deliver four doughnut-shaped excitation foci, enabling high-speed single molecule tracking.

In this project, we will upgrade an existing confocal microscope to implement RASTMIN and potentially p-MINFLUX, to make it available to the microscopy community through our user facility.

MISSION

The hired engineer should be specialized in optics or advanced microscopies, and with experience in programming. He/she will be in charge of implementing and testing a Spatial Light Modulator and a xyz stabilization system, and performing and validating RASTMIN experiments on test samples. He/she will be supervised by Emmanuel Margeat, who has 20 years experience in building optical setups in confocal geometry for FCS, smFRET, and TCSPC experiments, and by Caroline Clerté, the permanent research engineer of the PIBBS platform. The test samples will be produced in our group and include multi-labeled DNA origami standards and multi-labeled Nuclear Pore Complexes.

SCIENTIFIC ENVIRONMENT

The CBS (<http://www.cbs.cnrs.fr>) is an institute dedicated to research at the forefront of structural biology and biophysics, with state-of-the-art facilities. Several CBS teams including ours have a strong experience in building and using home-made superresolution and single molecule microscopes.

This project will be conducted in collaboration with the group of Fernando Stefani (Buenos Aires, Argentina) and Philip Tinnefeld (LMU Munich, Germany), who introduced the RASTMIN and p-MINFLUX technologies.

Montpellier is a stunning city on the Mediterranean coast with a large international community. Our research team includes 18 people with 8 permanent researchers. The team has a longstanding record in the training of young apprentices and mentoring young researchers. More info : <https://integrativebiophysicsofmembranes.wordpress.com>

COMPETENCES

Highly motivated and ambitious candidates are encouraged to apply. We require:

- o A master degree or PhD in optics/microscopy/biophysics.
- o A good level of computational skills (such as Python, Matlab, Labview....)
- o High level of interest in the development of non-conventional protocols and techniques.
- o Excellent English communication and teamwork skills.

Previous on-hands experience in optics, home made microscopes and/or MINFLUX microscopy will be very positively considered.

TERMS OF SALARY AND EMPLOYMENT:

This project is funded by the national infrastructure FranceBioImaging. Successful applicants will receive a salary according to CNRS rules

APPLICATION PROCEDURE:

The application must be submitted as soon as possible (and before November 30th), in English to margeat@cbs.cnrs.fr and must include the following:

- o Curriculum vitae
- o A report on previous research / experience (1/2 to 1 page)
- o The names, addresses and contact details of 2 referees