

Postdoctoral position

Photoacoustic imaging of neuronal activity in mice

Job description

Research program: The project aims at developing a *photoacoustic imaging* setup to non-invasively *access neuronal activity at large depths* (≥ 2 mm) in the *mouse brain*.

To provide a sufficient detection bandwidth and hence achieve quasi cellular resolution, the *acoustic field will be optically detected* using custom-made Fabry-Pérot cavities. Wide-field interrogation strategies will be investigated to yield the high temporal resolution required for neuronal activity imaging. We will apply these techniques to perform calcium imaging in mice.

Collaborations: As dealing with advanced optical fabrication and neurobiology, this project will be carried out in close collaboration with other groups from Marseille ([RCMO group](#) at Fresnel Institute, [Cossart group](#) at [Inmed](#)).

Requirements

Candidates with a PhD in physics, optics, electrical engineering, neuroscience (with some experience in optical imaging) or any related field are encouraged to apply. As this project is tightly linked to its applications in biology, the candidates are expected to have a strong interest for neuroscience and biology.

Programming skills are essential (Matlab or Python). As they will be evolving in an international environment, the candidates must be fluent in English, and exhibit excellent communications capabilities (written and spoken).

Host lab

The project will be carried out at the [Fresnel Institute](#) in Marseille, within the [MOSAIC group](#). Gathering more than 40 people from around the world, this interdisciplinary group is working at the crossroad of physics and biology.

Location and duration of the contract

Marseille offers a unique environment, combining a stimulating research community with an exceptional quality of life. The contract will cover the period between January 1st 2020 and December 31st 2021 (2 years).

Application procedure

Please send a detailed CV, a cover letter, as well as names, affiliations, and email addresses of two references to thomas.chaigne@fresnel.fr. Make sure to mention “[Postdoc application]” in the email object.