



Fundación Biofísica Bizkaia
Biofisika Bizkaia Fundazioa

FUNDACIÓN BIOFÍSICA BIZKAIA / BIOFISIKA BIZKAIA FUNDAZIOA

OFFER – Research contract with the possibility to do a PhD in “Smart nanoprobes for ictus”

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A research position is available at IBF - Instituto Biofisika Basque Centre for Biophysics under the supervision Dr. Mónica Carril in the FluoroNanoTools Lab (<https://biofisika.org>). The position has an initial duration of 18 months, starting on January 1st, 2022 and could be extended for another extra 18 months to do the PhD thesis.

The IBF is a joint research centre of the University of the Basque Country (UPV/EHU) and the Spanish National Research Council (CSIC). In close partnership with the Fundacion Biofisika Bizkaia (FBB), the centre focuses on fundamental and translational biophysics research and offers a highly collaborative culture. Accredited as a Basque Excellence Research Centre (BERC), the institute provides outstanding shared facilities for advanced biophysical and structural biology approaches in a new research building in the main Leioa campus of the University of the Basque Country.

Description of the project and position offered

Fluorine (^{19}F) is a unique atom that combines small atomic size with the highest electronegativity in the Periodic Table. It constitutes an interesting label for diagnosis and biomedical imaging due to the lack of background signal, allowing for unequivocal detection of fluorinated probes. In this context, fluorinated nanoparticles are emerging as alternative contrast agents or imaging probes for diagnosis by ^{19}F MRI. Apart from pure diagnosis, one of the most innovative fields in which fluorine probes are being developed is the design of smart or OFF/ON probes. Since there is no detectable background signal, fluorinated probes are ideal candidates for the design of OFF/ON systems, in which the signal is temporarily in the OFF state and is subsequently triggered by selected external stimuli. This feature can be tuned so that the appearance of signal is a consequence of the processes or phenomena of interest, gaining in this manner additional information regarding biomarkers of interest in situ and in real time.

In this context, the open position will focus on developing and testing smart or responsive contrast agents based on fluorinated nanoprobes to study the role of metalloproteinases after stroke by ^{19}F MRI. It is a multidisciplinary project involving chemistry and biomedicine that will be carried out in the frame of a collaboration with Dr. Abraham Martin from Achucarro Basque Centre for Neuroscience (<https://www.achucarro.org/es/research/group/laboratory-of-neuroimaging-and-biomarkers-of-inflammation>).

Education and Experience Required

Applicants must have a degree in Chemistry and a Master that gives access to PhD programs. Background in organic synthesis, nanotechnology and biomedicine will be positively valued. Applicants should have a good academic record, good communication skills, a strong passion and commitment to science, and work well within a group. Knowledge of written and spoken English is also needed.



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It is recommended that applications are made as soon as possible as they will be considered upon arrival.

They must include:

1. a cover letter highlighting their interest in the position and the main research achievements.
2. curriculum vitae clearly stating the degree and master final qualifications.
3. the name and contact address (e-mail) of at least one academic referee.

Contact: We are an equal opportunity employer committed to diversity. Please submit a curriculum vitae (indicating your average final qualifications) and motivation letter, through the Biofisika website contact page (<http://biofisika.org/contact/>), adding the following subject: [*Job Application: 90_MC*].

Deadline: 31 December, 2021