



Fundación Biofísica Bizkaia
Biofisika Bizkaia Fundazioa

FUNDACIÓN BIOFÍSICA BIZKAIA / BIOFISIKA BIZKAIA FUNDAZIOA

OFFER – PhD Position in “Neutron Scattering & Protein– Biomembrane interaction”

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The IBF is a joint research centre of the University of the Basque Country (UPV/EHU) and the Spanish National Research Council (CSIC). In partnership with Fundación Biofísica Bizkaia (FBB), the centre focuses on advancing knowledge about the physical and chemical processes underlying biology and disease. With the FBB accredited as a Basque Excellence Research Centre (BERC) by the Basque Government, the IBF and FBB partnership enjoys a strong national and international reputation, and provides outstanding shared facilities for advanced biophysical and structural biology approaches in a new research building in the main Leioa campus of the UPV/EHU.

Offer and description of the project

A predoctoral position to do the PhD thesis is available at Instituto Biofisika under the supervision of Prof. Marité Cárdenas Gómez (<https://biofisika.org>). The position is fully funded and has a duration of 3 years. Neutron scattering is a technique that seeks to understand the properties of matter at a structural and dynamic level. Neutron scattering techniques are only available in large facilities, as they can only be produced in nuclear reactors or spallation sources. The European Spallation Source (ESS) is currently being built in Lund, Sweden, and the Basque country has contributed significantly by building key components. At the end of the construction phase, it is very important that there are trained users capable of using the full potential of the ESS to advance in science and technology in the Basque country. Are you the next ambassador for the use of neutron scattering in the Basque Country?

The open PhD position will focus on optimizing methods to study membrane structure under curvature and in presence of a range of biomolecules, it may cover as well the study of lipid-based nanoparticles (of the same type as those used in the Pfizer and Moderna vaccines against COVID19) structure and the behaviour of their lipid components under various curvatures. This is important since curvature may determine the composition of the outer surface of the LNP, and this in turn determines how these particles interact with the molecules present in the serum upon injection in the body. Among these, apolipoprotein E (ApoE) binding to LNP is key for their uptake and the liver and this needs to be limited to successfully produce organ targeted LNPs. This project includes a collaboration with AstraZeneca in Sweden.

Required background

Applicants must have a degree in Physical Chemistry, Nanoscience or Physics, and a Master that gives access to PhD programs. Background in colloidal and surface chemistry, nanotechnology, biochemistry, biophysics will be 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 required.



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We are an equal opportunity employer committed to diversity. Applications should be addressed through the Biofísica website contact page (<http://biofisika.org/contact/>), adding the following subject: [Job Application: 106_MCardenas Neutrino]. It is recommended that applications are made as soon as possible as they will be considered upon arrival. Applications in a single pdf file must include:

- 1. 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. Copies of master and bachelor diplomas as well as a copy of the course transcripts.*
- 4. Name and contact address (e-mail) of two academic referees.*

The aimed start date for the position is June the 1st.

Incomplete applications will not be considered.

Deadline: March 15, 2023