Call reference number	(2026-26)
Call name	Predoctoral Researcher - Biohybrid molecular–microbial architectures for electron transfer engineering
Application Deadline	2026/11/29

Introduction and main description

BCMaterials, Basque Center for Materials, Applications and Nanostructures, is an autonomous research center launched in June 2012 by Ikerbasque, the Basque Foundation for Science and the University of the Basque Country (UPV/EHU) as a research center for Materials, Applications and Nanostructures. The center is included in the BERC's (Basque Excellence Research Centers) network and its mission is to generate knowledge on the new generation of materials, turning this knowledge into (multi)functional solutions and devices for the benefit of society.

Controlling electron transfer at biological membranes is a challenge for biohybrid systems that combine synthetic materials with electroactive microorganisms.

We are looking for a predoctoral researcher who will focus on the design and synthesis of asymmetric organic and metal-containing molecular systems and investigate their incorporation into model lipid membranes and electroactive bacteria. Different spectroscopy and electrochemistry techniques will be used to relate molecular properties to membrane-associated electron transfer and extracellular electron transfer (EET) in electroactive bacteria.

This is a 4-year position funded through a predoctoral research training contract associated with the BIOMMA project (PID2025-171016OA-I00).

Skills and Requirements

We seek a highly motivated candidate with strong background in chemistry or molecular materials, and a strong interest in the synthesis and physical characterization of functional molecules.

Required:
- BSc and MSc in Chemistry, Materials Science or a closely related discipline.
- Practical experience in organic, inorganic or coordination compound synthesis and purification.
- Familiar with molecular characterisation methods (for example NMR, mass spectrometry, UV-Vis, fluorescence, or electrochemistry).
- Good written and spoken English.

Desired:
- Experience with donor-acceptor molecules, molecular photochemistry, redox-active systems or molecular self-assembly.
- Experience in electrochemistry, time-resolved spectroscopy, transient absorption or electron-transfer kinetics.
- Familiarity with lipid bilayers, vesicles, supported membranes or bioelectrochemical systems is advantageous but not required.

Skills and Requirements
Additional skills: - Ability to work independently and collaboratively in an international, interdisciplinary research environment. - Interest in learning complementary methods across synthesis, photophysics, electrochemistry and membrane-based systems. - Spanish is an advantage but is not required.

Work Program / Duties / Responsibilities
- Design, synthesise and characterize functional organic and metal-containing molecular systems. - Determine their optical, redox and electron-transfer properties using spectroscopy and electrochemistry. - Prepare model lipid-membrane systems and investigate molecular incorporation, stability and interfacial behaviour. - Develop and apply electrochemical or light-driven assays for membrane-associated electron transfer. - Evaluate selected materials in biohybrid systems with electroactive microorganisms, focusing on EET-related responses. - Interpret data, document experiments, present findings and contribute to scientific publications.

Application Procedure
Apply by submitting a motivation letter and a CV (in English) using the "Contact" button at the corresponding offer, at the "Join Us" area on BCMaterials' portal (https://www.bcmaterials.net/join-us). Your name and email address will be required for furher contact too.

Other Relevant Information
We provide a highly stimulating environment with state-of-the-art infrastructures, and unique professional career development opportunities. We offer and promote a diverse and inclusive environment and welcomes applicants regardless of age, disability, gender, nationality, ethnicity, religion, sexual orientation or gender identity.