

Call reference number	(2023-28)
Call name	Synthesis of multi-component nanoparticles with antifouling properties for biomedical applications, and study of nanoparticle protein interactions.
Application Deadline	2023/11/30

Introduction and main description
<p>We are delighted to offer a position of predoctoral researcher at BCMaterials (Basque Center on Materials, Applications and Nanostructures, Leioa, Spain, www.bcmaterials.net), to work in a multidisciplinary group of chemistry, biomedicine, physics, and computational material science.</p> <p>We are seeking a motivated person, with a high interest in working in the field of nanotechnology with potential impact in the nanobiomedicine field.</p> <p>The candidate will work on the synthesis and physicochemical characterization of metallic nanoparticles with heterogeneous surfaces (patchy nanoparticles). The candidate will study the interaction of nanoparticles with protein and biological media to understand the mechanism of the protein corona formation and inhibition. For this, he/she will make use of different physicochemical methods, assisted by theoretical simulation studies performed by our research team. The nanomaterials will be tested in in vitro and in vivo assays in collaboration with external groups. The goal is the creation of nanomaterials that can show prolonged biokinetics and selectivity for applications as drug delivery carriers, contrast agents, and nanotherapeutics.</p> <p>This is a full-time position and the successful candidate will be enrolled in a PhD program at UPV/EHU. The position is funded for 3 years. Competitive salary and benefits will be offered. If you are interested in this opportunity, please submit a CV and cover letter outlining your relevant experience and research interests.</p>

Skills and Requirements
<p>The candidate must have a Master in Chemistry, Material Science, or related areas. A background in nanoparticle synthesis and/or protein-materials interaction is highly desirable, in the same way, some knowledge of material science simulation is a plus. Proficiency in speaking and writing in English.</p> <p>Self-motivated and able to work in a team and willing to coordinate the research in a particular topic.</p> <p>A high level of motivation and independent thinking abilities</p> <p>Presentation skills and ability to meet deadlines are also required.</p>

Work Program / Duties / Responsibilities
<p>The PhD candidate will:</p> <p>Learn different protocols for wet chemical synthesis of nanoparticles, and their characterization with different physicochemical techniques: electron microscopy (HR-TEM, EDX, SEM, etc), spectroscopy (NMR, FTIR, etc.) scattering (DLS, Z-potential, SAXS, etc.), electrophoresis, etc.</p>

Work Program / Duties / Responsibilities

Develop synthesis protocols for controlling nanoparticle characteristics: size, surface patchiness, surface chemical functionalization, etc.
Explore protein-nanoparticle interaction through different methodologies (DLS, electrophoresis, NMR, etc.)
Analyze experimental data, prepare research reports, and contribute to academic publications. Collaborate with external groups, and perform research stays for complementary work in biological studies.
Engage in scientific discussions and present the results in group meetings, institute seminars, and scientific conferences.
Pursue the doctoral research under the guidance of experienced faculty members.
Assist in laboratory management and maintain a safe and organized research environment.

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 further contact too.

Other Relevant Information

Include contact details for 2 referees or 2 recommendation letters.