

PREDOCTORAL CANDIDATE

to work in antimicrobial surfaces with clinical applications in the field of bone regeneration

OFFER DESCRIPTION

We are looking for a **PhD candidate** to work in the field of antimicrobial surfaces with clinical applications. Specifically, the candidate will focus on **the characterization of the interactions between bacteria and nanostructured biomaterials using different bacterial strains and applying advanced characterization techniques**, in order to disclose the mechanisms underlying the microbiocidal activity.

The ultimate goal is to advance in the **fundamental understanding of the contact-based bactericidal mechanisms**, as a strategy to overcome the problems associated to antibiotic resistance, one of the most serious health threats in the recent years. To this end, we will study the effect of **topography, chemistry and mechanical properties on the bactericidal efficacy of nanostructured calcium phosphate bioceramics** under both static and dynamic conditions.

The position is part of the **ERC Advanced Grant BAMBBI**, led by Prof. Maria-Pau Ginebra. If selected, the candidate will have the opportunity to work in a highly interdisciplinary team, the Group of Biomaterials, Biomechanics and Tissue Engineering (BBT), in the Department of Materials Science and Engineering at the Universitat Politècnica de Catalunya (<https://biomaterials.upc.edu/en>). The BBT group has a broad expertise on the design, synthesis and characterization of biomaterials for tissue regeneration, with special emphasis in bone applications.

The PhD does not involve coursework, unless agreed by the student and the supervisor. This fellowship does not involve teaching duties.

ADDITIONAL INFORMATION

About the BBT Group



The BBT group is a **multidisciplinary team** of researchers with different backgrounds, including chemistry, physics, biology, materials science, biomedical engineering. Our **main scientific goal** is the **development of biomaterials for tissue and organs regeneration/functional repair**. This approach requires the design of materials which can modulate the response of the receiving tissue, leading in some cases to the regeneration and

neof ormation of the degraded tissues and, in others, to a perfect integration of the biomaterial and to the recovery of the lost functionality.

About UPC

The Universitat Politècnica de Catalunya · BarcelonaTech (UPC) is a [public institution of research and higher education](#) in the fields of engineering, architecture, sciences and technology, and one of the leading technical universities in Europe. UPC has every year more than 6,000 bachelor's and master's students, around 500 doctoral students and 3,067 graduates in lifelong learning. The UPC's [approach](#) to research is highly varied and [covers applications and basic research in many knowledge areas](#). The impact of this research makes the [UPC one of the main European technology universities](#).



REQUIREMENTS

Skills/Qualifications

The candidate must hold a [MSc degree or equivalent](#). We will consider candidates with various research backgrounds including [nanotechnology, materials science, biomedical engineering, microbiology, biomedicine](#). The candidate is expected to be proficient in [English](#).

Specific Requirements

Previous [exposure](#) to biomaterials, nanotechnology, characterization of inorganic materials or characterization of nanostructured materials will be positively valued. However, [willingness and motivation to expand your expertise by reaching out to other disciplines](#) is required..

SELECTION PROCESS

How to apply and deadline

Target start date: [January 2025](#).

The evaluation will be on the basis of the academic record and credentials, previous research experience, exposure to relevant disciplines and proficiency in English.

Those interested may email a CV with a list of three references, a short (max one page) statement describing your motivation and prior experience and your academic transcripts to [Dr. Maria-Pau Ginebra](#) (bbt.jobs.upc@gmail.com), with "[PhD candidate BAMBBI 3](#)" in the email subject.