

PREDOCTORAL RESEARCHER

For working on the design of novel recombinant proteins for
functionalizing biomaterials

OFFER DESCRIPTION

We are looking for a PhD candidate to investigate the use of novel recombinant proteins for tissue engineering. The candidate will design, synthesize and purify recombinant proteins, inspired from extracellular matrix and growth factors, to stimulate adhesion and differentiation of human stem cells into relevant lineages for tissue regeneration. The novel designed proteins will be chemically attached onto different biomaterials (metallic and polymeric), and 3D-printed in cell-laden hydrogels for different target clinical applications (bone regeneration, wound healing, cardiovascular, etc.). These new materials will be fully tested, characterized and biologically assessed for their clinical use in regenerative medicine.

The position will be part of the TAPERMESH project, led by Prof. Jose Maria Manero, and will be co-supervised by Dr. Jordi Guillem-Marti. The current offer is for applying for an FPI-UPC fellowship (link [here](#)). If selected, the candidate will have the opportunity to work in a cutting-edge and 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.

REQUIREMENTS

Skills/Qualifications

The candidate must hold a MSc degree or equivalent. Candidates should have a biological background, but candidates with backgrounds such as biomedicine, biotechnology, bioengineering or biochemistry will also be considered. High qualifications are required to be competitive in the selection process of the FPI-UPC fellowship.

Specific Requirements

Previous experience in the production of recombinant proteins either with human cells or bacteria is desirable. Additionally, experience with biomaterials, materials characterization, 3D printing, cell culture and/or microscopy will be a plus. Willingness and motivation to expand your expertise by reaching out to other disciplines is required.

SELECTION PROCESS

How to apply and deadline

Applications must be submitted to the FPI-UPC call before the July 28th, 2023.

The evaluation will be on the basis of the academic record and credentials, previous research experience, and exposure to relevant disciplines. Those interested may email a CV with a short (max one page) statement describing your motivation and prior experience to Dr. Jordi Guillem-Marti (jordi.guillem.marti@upc.edu), with “PhD candidate TAPERMESH” in the email subject.

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

About the 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. Every year, more than 6,000 bachelor's and master's students, more than 500 doctoral students graduate 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.