

OPEN POSITION

Early-Stage Researcher / PhD position (ESR 1) at University of Ioannina (UOI), Greece

This ESR position is part of the European Training Network “BIOREMIA” dealing with research on novel biofilm-resistant materials for hard tissue implant applications. BIOREMIA offers the possibility to pursue the PhD within the Network at different universities and industrial companies from 10 European countries (Germany, Austria, Italy, Sweden, Greece, UK, Spain, Ireland, France, and Switzerland).

Background information on all ESR positions and BIOREMIA Network is available on www.bioremia.eu

BIOREMIA (“*BIO*film-*RE*sistant Materials for hard tissue Implant Applications”) is funded by the European Union’s Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement no. 861046.

Job title	Early-Stage Researcher (PhD student position) / ESR 1
Project title	ESR 1: Antibacterial coatings of metallic surfaces: From ab-initio to large scale molecular dynamics simulations
Application deadline	31.03.2020
Expected starting date¹	May.2020 (approx.)
Recruiting institution	University of Ioannina (UOI) University campus, Ioannina, GR 45110 Website: https://www.uoi.gr/
City, Country	Ioannina, Greece
Job/project description	<p>Objectives: Investigation of the early-stages of antibacterial growth and anti-fouling coatings on appropriate Ti-based or Fe-based surfaces by means of <i>ab initio</i> calculations (using DFT). Starting with the low index surfaces, the energetically favored faces and the alloy’s atomic level possible growth ad-layer modes and/or patterns will be evaluated, aiming in revealing the combinations with the highest variety of chelation adatom/molecule sites. Structural, electronic and bonding properties of antibacterial coatings on selective metallic surfaces will be studied. The electronic charge density of the periodically reproduced molecule brush on the metallic surface will be determined aiming to reveal the charge distribution that may cause electrostatic repulsion as an alternative way to prevent bacteria deposition. Scale up using molecular dynamics in order to investigate how the surface features (chemistry, topography) will affect the interaction strength with the bacteria.</p> <p>Expected Results: Understanding the structural, bonding and electronic properties of adsorbed organic molecules and complexes with known antibacterial properties on the prevalent metal-based surface. These calculations will predict the metallic surface with the lowest propensity for bacterial adsorption.</p> <p>The ESR will travel abroad for research secondments at partner organisations of the BIOREMIA Network (e.g. at Montanuniversität Leoben- Austria, Universitat Autònoma de Barcelona- Spain, Ashland Specialities Ltd-Ireland) and will participate in specialised training meetings and international conferences.</p>

Appointment	The appointment will be on a temporary basis for a maximum period of 36 months (PhD student, regular full-time employment contract), with an attractive salary plus allowances package according to the <i>Marie Skłodowska-Curie / Innovative Training Networks</i> rules.
Eligibility conditions	Applicants must at the time of recruitment: 1) Be in the first four years (full-time equivalent) of their research careers 2) Have not resided in Greece for more than 12 months in the last 3 years 3) Have not been awarded a doctoral degree.
Candidate's profile	<ul style="list-style-type: none"> Applicants must hold a Master's degree or equivalent in <i>Materials Science and Engineering or Physics</i> providing access to PhD programs and should have experience with experimental research. Applicants must have excellent proficiency in written and spoken English. Applicants must have strong motivation and ability to collaborate in an interdisciplinary and international team.
How to apply²	<p>Interested candidates should send an application containing the following documents in English (and, when necessary, a certified translation of official documents):</p> <ul style="list-style-type: none"> Motivation Letter (describing research career goals, skills, experience, and highlighting the consistency between the candidate's profile and the chosen ESR position) A complete Curriculum Vitae with references to past research and training experiences Copies of Bachelor and Master's certificates/diploma & transcripts Two Reference Letters Publications (if available). <p>Applications should be sent by e-mail <u>as a single PDF</u>, quoting the project name and the ESR position "BIOREMIA - ESR 1", to: Assoc. Prof. Dr. Christina Lekka chlekka@uoi.gr</p> <p>Applications can also be submitted via the online <i>Application Form</i> at www.bioremia.eu</p>
Further information	<ul style="list-style-type: none"> For additional information about this ESR position please contact: Assoc. Prof. Dr. Christina Lekka chlekka@uoi.gr Some background material about host institution can be found here: https://www.uoi.gr/ and http://cmsl.materials.uoi.gr/ and www.bioremia.eu

¹ Employment start date to be mutually agreed

² The recruiting organization may decide to interview only those applicants who appear from the information available, to be the most suitable, in terms of experience, qualifications and other requirements of the position.