OPEN POSITION

Early-Stage Researcher / PhD position (ESR 2)

The Leibniz Institute for Solid State and Materials Research Dresden, Germany

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 ETN (*"BIOfilm-REsistant 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 2**
Project title	**ESR2: Low-rigidity beta-type Ti-based alloys with intrinsic antibacterial and anti-biofilm properties**
Application deadline	31.03.2020
Expected starting date[1]	May 2020 (approx.)
Recruiting institution	**The Leibniz Institute for Solid State and Materials Research Dresden (IFW Dresden)** Helmholtzstrasse 20, 01069 Dresden, Germany Website: https://www.ifw-dresden.de/
City, Country	Dresden, Germany
Job/project description	The *objective* is to develop new beta-type Ti-based alloys with antibacterial functionality. Beta-type TiNb-based alloys containing small additions of antibacterial elements (e.g. Ag, Cu etc.) will be prepared by cold crucible casting and additive manufacturing (selective laser melting). As a bone implant use is envisioned, the main characteristic that will distinguish beta-type Ti-alloys from commercial Ti-based materials will be the changed biomechanical environment resulting from the lower Young's modulus of the bulk material, combined with reasonable mechanical strength. Various alloy formulations will be produced and their microstructure, corrosion, tribocorrosion and mechanical properties will be investigated. Optimized compositions will be selected for *in vitro* cell culture and biofilm testing. *Expected Results*: a) Biofilm-resistant Ti-based alloys with low stiffness and improved corrosion and wear resistance; b) Understanding the effects of bactericidal alloying elements on the chemical and mechanical properties of Ti alloys. The ESR will travel abroad for research secondments at different institutions of the BIOREMIA Network (e.g at INSA Lyon and Anthogyr- France, University of Gothenburg - Sweden) and will participate in specialised training meetings and international conferences. The ESR will enroll in the doctoral student programme at Technical University Dresden.
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 *Marie Skłodowska-Curie / Innovative Training Networks* 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 Germany for more than 12 months in the last 3 years 3) Have not been awarded a doctoral degree.
Candidate's profile	• Applicants must hold a Master's degree or equivalent in *Materials Science and Engineering or Physics* 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 apply[2]	Interested candidates should send an application containing the following documents in English (and, when necessary, a certified translation of official documents): • 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). Applications should be sent by e-mail as a single PDF**,** quoting the project name and the ESR position "**BIOREMIA - ESR 2**", to: bewerbung@ifw-dresden.de Applications can also be submitted via the online *Application Form* at www.bioremia.eu
Further information	• For additional information about this ESR position, please contact the scientist-in-charge / supervisor: Assoc. Prof. Dr. Mariana Calin m.calin@ifw-dresden.de • Some background material about host institution & research group can be found here: https://www.ifw-dresden.de/ifw-institutes/ikm/ https://www.ifw-dresden.de/about-us/people/assoc-prof-dr-mariana-calin/ 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.