



Instituto Universitario de Investigación
en Nanociencia de Aragón
Universidad Zaragoza

A full-time Early Stage Researcher (ESR) position at HeatNMof Project

HeatNMof aims to develop smart multifunctional drug nanocarriers based on versatile porous biocompatible nanometric Metal Organic Frameworks, associated with exceptional drug payloads and controlled releases, and photo- and/or magnetic inorganic nanoparticles, providing both a specific control of reactions inside living entities and additional properties such as imaging and/ or hyperthermia therapy. The successful development of this project, involving academic and industrial partners, will contribute not only to improve the highly societal relevant cancer therapy but also to train the next generation of materials scientists in a highly interdisciplinary and intersectorial research environment.

The HeatNMof consortium includes the following 10 European institutions as Beneficiaries (3 industrial companies, 3 research centers and 4 academics): IMDEA Energy Institute, Spain; Universidad Santiago de Compostela, Spain; Centre National de la Recherche Scientifique, France; University of Antwerp, Belgium; Immaterial Labs LTD, United Kingdom; Institut National des Sciences Appliquées de Toulouse, France; University of Hamburg, Germany; Fondazione Istituto Italiano di Tecnologia, Italy; Nanoscale Biomagnetics SL, Spain; ISERN Patentes y Marcas M SL, Spain. The HeatNMof program is coordinated by Patricia Horcajada (IMDEA Energy Institute, Spain).

Benefits

The successful candidates will receive an attractive salary in accordance with the MSCA regulations for Early Stage Researchers. The exact (net) salary will be confirmed upon appointment and is dependent on local tax regulations and on the country correction factor (to allow for the difference in cost of living in different EU Member States). The salary includes a living allowance, a mobility allowance and a family allowance (if married). The guaranteed PhD funding is for 36 months (i.e. EC funding, additional funding is possible, depending on the local Supervisor, and in accordance with the regular PhD time in the country of origin). In addition to their individual scientific projects, all fellows will benefit from further continuing education, which includes internships and secondments (ca. 10 months), a variety of training modules as well as transferable skills courses and active participation in workshops and conferences.

Eligibility criteria

Applicants must satisfy the eligibility requirements for an ESR under the Horizon 2020 ITN Programme at the date of recruitment; in particular, they should be eligible to be appointed as an ESR by satisfying the following criteria:

- to have less than 4 years research careers after Undergraduate/Masters graduation (this is cumulative research experience and does not include management/industrial or other work experience);
- to not hold a PhD degree (PhD candidates under 4 years of registration and before completion may apply);
- to not have resided or carried out their main activity (work, studies, etc) in the host country for more than 12 months (cumulative) in the three years immediately before their recruitment (meant as the first day of the employment of the researcher for the purposes of the action (i.e. the starting date indicated in the contract). Compulsory national service and short stays such as holidays are not taken into account.

How to apply

Interested applicants should send an email **before the 15th of June 2020 at 5:00 PM CET** to the contact person for each position (see details in Job description). Applications should enclose the following documents:

- (a) your Europass CV
- (b) a personal motivation letter describing in detail the reasons behind your professional choice to join our doctoral training program (400 words)
- (c) copies of academic certificates and transcripts, including (if finished) a copy of your MSc thesis
- (d) a brief research proposal addressing the topic of the research project (500-1000 words)
- (e) Proof of language proficiency: Language certificate, university studies in the relevant language, research stay, etc.
- (f) Optional: Supporting letters

Job description:

Project Title: Design, characterization and *in vitro* application of coupling AMF applicator to fluorescence microscope

PhD Objectives:

The aim of this PhD project is to develop a coupling AMF applicator for confocal microscope and study the thermal and electromagnetic phenomena in biological material. His/her tasks will also include the study of nanomagnetism, numerical modeling of electromagnetic and heat phenomena in condensed matter, luminescence and fluorescent materials and high power radiofrequency applicators.

Specific Requirements:

The ideal candidate is a highly motivated student with:

- Bachelor's degree in Physics or Engineering
- MSc degree (or equivalent; allowing the candidate to embark in a PhD in the hosting country) in Physics, Materials Science, or Engineering-related.
- Experience on numerical simulation of magnetic problems.

- Good self-management skills to work independently on a high scientific level. High motivation.
- Team player skills and enthusiasm to work in a multi-disciplinary, intersectoral and collaborative environment.
- To have analytical mind and excellent ability to express technical concepts and conclusions.
- Accredited very good communication skills in English (both written and spoken) are mandatory. Spanish communication skills are desirable.

Hosting institution: The successful applicant is expected to register for PhD at University of Zaragoza (UNIZAR), Spain in 2020, and deploy activities both at the Institute of Nanoscience of Aragón (INA), UNIZAR and also at the facilities of the hiring company, nanoScale Biomagnetics SL.

Expected starting date: November 2020

Contact person: Beatriz Sanz bea@nbnanoscale.com