Predoctoral researcher at IMDEA Energy to work on

Core-shell growing of nanoMOFs onto magnetic inorganic nanoparticles

We are happy to announce the availability of an Early Stage Researcher (ESR) position of EU Marie Sklodowska-Curie Actions (MSCA) This position is funded by the HeatNMof H2020 project (G.A. N. 860942), an EU Innovative Training Network of MSCA aiming 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).

The Institute IMDEA Energy is a Research Centre created by the Regional Government of “Comunidad de Madrid” to develop world-class R&D on clean and renewable energy. The ultimate goal of the Institute IMDEA Energy is to achieve outstanding scientific and technological contributions in the creation of a sustainable energy system. The aim of the Institute is to make a significant impact in all energy-related research topics by bringing together high quality researchers, providing them with excellent infrastructures and resources and promoting their close collaboration with the industrial sector.

IMDEA Energy is opening a predoctoral researcher position on the Research Line: Materials for adsorption and catalysis, with the following characteristics:

Your Tasks:

The aim of this PhD project is to prepare core-shell nanocomposites based on biocompatible porous Metal-Organic Frameworks (nanoMOFs) and magnetic inorganic nanoparticles. His/her tasks will also include the surface engineering and the encapsulation of drugs within the resulting nanocomposites.

Your Qualification:

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.
Skills/qualifications:

- MSc in Chemistry, Materials Science, Pharmacy, Biochemistry, Biology, Chemical Engineering or equivalent.
- Experience on material synthesis (coordination chemistry, magnetic nanoparticles), nanomaterials and surface chemistry.
- Expertise on characterization (XRD, TGA, spectroscopies, microscopies, DLS etc.).
- Desirable: experience on HPLC.
- 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, intersectorial and collaborative environment.
- To have analytical mind and excellent ability to express technical concepts and conclusions.
- Accredited good communication skills in English (both written and spoken) are mandatory.

Location: Mostoles, Madrid, Spain.

Remuneration and duration: 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, a variety of training modules as well as transferable skills courses and active participation in workshops and conferences.

Expected starting date: July-September 2020

Reference: 20.17. MPA2 PRE

Interested applicants should send an e-mail before the 17th of May 2020 at 3:00 PM CET to

Email patricia.horcajada@imdea.org

subject: Reference 20.17. MPA2 PRE

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