

Temporary Postdoctoral position in Blue Biotechnology

Institute of Analytical Sciences and Physico-Chemistry for Environment and Materials (IPREM)

<https://iprem.univ-pau.fr/fr/index.html>

Université de Pau et des Pays de l'Adour (UPPA), Anglet, France

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Research Group:

Recently, UPPA was granted the label Initiatives Science Innovation, Territoires, Economie (I-SITE) in the frame of the second Programme d'Investissements d'Avenir (PIA 2) with its project Energy Environment Solutions (E2S). To become an attractive international reference in research in these two areas, E2S UPPA has implemented different research tools, including scientific research chairs: 'Chaires d'Excellence Partenariales'. The proposed position is in the framework of one of these partner-based chairs: MANTA - MARIne MaTerIAls.

In the MANTA research chair, led by Dr. Susana Fernandes, we use marine organisms and the marine environment as a source of inspiration for the development of novel functional (bio)materials and processes combining chemistry, biology, materials science and biotechnology. Our research is funded by large grants from Campus France (Make Our Planet Great Again: MOPGA), FORMAS and public institutions and private partners namely E2S UPPA, Communauté d'Agglomération du Pays Basque (CAPB), Région Nouvelle Aquitaine (NA), Comité Interdépartemental de Pêche Maritimes et des Elevages Marins (CIDPMEM 64 40) through a DLAL project, Laboratoires de Biarritz, Scale and Lees.

Host Lab: MANTA is hosted by IPREM that is a joint Research Unit CNRS/UPPA (UMR 5254) in Pau and Anglet, France. IPREM has an extensive and highly competitive research program that encompasses fundamental research in physical chemistry, analytical chemistry and microbiology, as related to the molecular structure of the living world, environmental management and the functional properties of different classes of materials.

More information on the research group and PI's profile is available in the website:

<https://iprem.univ-pau.fr/fr/collaborations/chaieres/manta/presentation.html>

<https://iprem.univ-pau.fr/fr/plugins/mypage/mypage/content/sfernande004.html>

Project description/Duties:

MANTA chair aims to mimic remarkable phenomena and hierarchical structures observed in the aquatic environment to design functional and environmentally sustainable (bio)materials based on marine molecules and assess their impact on human health and marine ecosystems. To do so, the project involves 4 key areas: (1) marine by-product and bioresources valorization; (2) marine bio-inspiration for ecofriendly chemistry and development of materials and processes for marine environment; (3) impact of the materials on the marine environment and on marine organisms; and (4) impact of biomaterials on the human health. Currently, we are a multidisciplinary research group of

about 14 people, with diverse technical backgrounds: postdocs, PhD candidates, research engineers and master students. To strengthen the team, we are now looking to recruit a postdoc with a strong background in Blue Biotechnology or Green Chemistry to develop alternative greener and efficient extraction approaches for obtaining red seaweed compounds (bioactive molecules and biomacromolecules). The postdoc will be in collaboration with the Comité Interdépartemental de Pêche Maritimes et des Elevages Marins (CIDPMEM 64 40) and SIAME (Laboratoire des sciences pour l'ingénieur appliquées à la mécanique et au génie électrique).

Polysaccharides are the major fraction extracted from red seaweeds. Nevertheless, this type of macroalgae also contains a variety of components with functional and biological properties. In this context, the main goal of this project is to develop alternative greener and efficient extraction approaches (sequential separation) for obtaining the integral red seaweed compounds (bioactive molecules and biomacromolecules). Also, the integral utilization/ valorization of these raw materials with biological properties of interest for food, cosmetic, medical and pharmaceutical applications is incentivized. From a scientific perspective, this position involves different methods to address the problematic of biomolecules extraction from red algae, purification and characterization. In particular, chemical, enzymatic and electric treatments will be used to improve efficiency and selectivity of the extraction of structurally complex marine molecules. We will characterize the ensuing products using different analytical methods, optical and magnetic spectroscopies, mass spectrometry, diffraction methods, imaging and biochemical characterization.

The position includes research, teaching duties (64h/year), supervision of undergraduate students and travel to conferences and meetings with partners/collaborators.

Requirements:

- To be eligible for the research employment, the candidate must hold a PhD degree in Biotechnology, Food Science, Chemistry or similar disciplines.
- Large part of the applicant PhD project and/or postdoc should have been focused on the *green* extraction of natural active molecules and biomacromolecules.
- Extensive experience in green extraction techniques and environmentally friendly solvents.
- Extensive experience in HPLC; GC-MS; NMR, HPSEC.
- The ranking will also accord weight to the candidates assessed competence in ability to interact effectively in a multi-disciplinary research environment.
- The applicant must be proficient in spoken and written English.

Additional qualifications:

Importance will also be placed on personal skills. In this case, we place particular weight on the ability to work as part of a team and a positive attitude towards mobility. The applicant will be responsible for a part of a larger project, and the ability to work independently and to take responsibility will be required.

Application:

A person with a PhD obtained not more than four years before the end of the application period is particularly eligible for the position.

The application should include:

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- CV
- Copy of PhD thesis diploma
- A motivation letter describing the applicant's previous research experience and how it is related to the present position (one, or maximum two pages) is also required.
- Contact details of two references

The application must be written in English.

Send the required documents to: susana.fernandes@univ-pau.fr

The application will be evaluated based on the following criteria:

Appropriate education and work/research in related fields. Candidate motivation, knowledge, scientific maturity and curiosity. Emphasis will also be placed on personal skills.

Selection process:

1. Evaluation of the candidates' application.
2. If selected, the candidate will have 15 min to present her/his CV and project. The presentation will be followed by questions/discussion.

Salary before taxes: 35 000 € per year (according to E2S UPPA index before taxes)

Starting date: April 2021 or as otherwise agreed.

Type of position: Full-time temporary position for 1 year.

For further information about the position, please contact

Susana Fernandes: susana.fernandes@univ-pau.fr

https://iprem.univ-pau.fr/fr/_plugins/mypage/mypage/content/sfernande004.html

Please submit your application by 28th February 2021